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PROPERTY AND THE PRICE REVOLUTION (HAINAULT, 1474–1573)

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DURING recent years, economic historians have tended to confirm the old-fashioned view that, around the year 1500, a real change took place in the development of European society; but the nature of this change is now considered to have been rather different from that postulated by nineteenth-century historians. A long period of declining population, falling grain prices and stagnating trade (at least in many of the older centres of economic activity) was followed by more than a century of rising population, growing towns and expanding trade. But the most distinctive economic phenomenon of the sixteenth century, and the most discussed by contemporaries, was the phenomenon of rapidly rising prices, especially rising agricultural prices. Modern economic historians have been so delighted with re-discovering this important event that, with some exaggeration, they have sometimes called it a price revolution. So much is generally accepted; but there is still disagreement about the effects of rising prices on the economic and social history of different classes, disagreements which have recently given rise to a spirited controversy about the fortunes of the English nobility and gentry during this period. These disagreements seem to arise largely from the nature of the sources and from the difficulties involved in using them as a basis for statistical analysis and in interpreting the results. Fortunately, for some parts of the Continent there exist sources which lend themselves more readily to statistical treatment. While the difficulties of interpretation are still formidable, the use of these sources may throw light not only on the economic history of the areas concerned, but may deepen our understanding of economic and social phenomena in general for this period; for rising prices were an all-European phenomenon.

In the *Archives Générales du Royaume*, of Brussels, there exist eighteenth century copies of registers of feudal property in the county of Hainault.[1] The originals are deposited in the Archives du Département du Nord, at Lille. Sample checks with micro-film copies of these originals revealed that the Brussels copies are generally accurate—at any rate sufficiently so, as to make the margin of error due to mistakes by the copyist statistically negligible. These registers are the main source used in this article.[1]

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[1] Arch. Gén. du Royaume, Chambre des Comptes, no. 1116, *Registre des Fiefs et arriers fiefs du Hainnau, 1474*; nos. 1118–20, *Fiefs et Arriers fiefs en Hainnaut, 1502*; no. 1121, *Recueil et denombrement des biens appartenans et dependans de plusieurs abbayes et des particuliers en Haynnaut et Cambresis 1502*; no. 1122, *Fiefs et arriers fiefs du Hainnaut des années 1564 et 1573*.

In 1470, Charles the Bold wrote to the *bailli* of the *châtellenie* of Ypres (the district outside that town), commanding him to arrange that 'all those who have and hold fees and mesne fees should make a good and true declaration of them,' stating their name, situation, size, value and rent charges. This information was to be handed to the ducal commissioners and receivers of taxes within a month of the publication of the order on pain of forfeiture of the fiefs.[2] It may be doubted whether this census was ready within a month; for it was not until 15 January 1475, that Charles wrote again to the *bailli* to fix the rate of military contributions; for, up to that time, said the duke, there had been no system of military service exacted from holders of fiefs: some had been burdened too heavily and others, 'by the dissimulation of our officials, or otherwise', had escaped too lightly. Fiefs of an annual rental value of about 200 *écus*, of 48 *gros* Flemish, were to furnish one knight (*homme d'armes*) with three horses; those of about 40 *écus*, one horseman; those of about 16 *écus*, one foot soldier; and those of up to 10 *livres* of 40 *gros*, were to remain exempt.[3]

The registers of the fees and mesne fees of Hainault were compiled in 1474. No ducal order about them has come to light, so far; but there is little doubt that their compilation was part of the same policy. Compared with the registers for Flanders, those for Hainault have the great advantage for the economic historian of presenting their information much more clearly and of stating the annual value of the fiefs. More important still, there are two further sets of registers of the same type for the years 1502 and 1564–73. If these registers can be treated as statistical samples, we shall have evidence of the distribution of real property in this province, outside the towns, and of income derived from it, for a period of very nearly a hundred years. It is the purpose of this article to show how this can, in fact, be done and what conclusions may be derived from such an analysis.

A general census compiled in Hainault by the receiver of taxes, Jehan du Terne, in 1469, gives the number of hearths (i.e. households) outside the towns as 28,778.[4] The number of entries of fiefs for 1474 is 2,146, i.e. about 7·5 per cent—a very adequate sample. The position is even better for 1502 where 2,469 entries compare with 22,632 households counted by the receiver of taxes in 1501[5]—a sample of rather more than 10 per cent. In the register of 1564–73 there are only 778 persons, while the number of households in the province was almost certainly higher than it was in 1502. As a sample, this is not as good as the entries for the other two dates; but it is still adequate.

In the later fifteenth and sixteenth centuries, the holders of fiefs owed certain obligations of military service to the crown. In the sixteenth century, these were mostly compounded for in money. There is no evidence that, apart from these obligations, fiefs differed either legally or economically from any other type of property. In the course of the sixteenth century even this remaining distinction tended to disappear—most probably because the owners of feudal property simply neglected to register it as such. Since the register of 1564–73 shows a rather higher percentage of nobles than the two previous ones—13·8 per cent, as against 6·5 per cent in 1474 and 8·6 per cent in 1502—it looks as if nobles found it more difficult than other people to commit such purposeful neglect. The statistical consequences of this development will be discussed later. Any other bias in this process of disappearance of feudal property has had to be ignored; it is unlikely to have been significant.

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[1] I would like to thank the University of Manchester for a travel grant which enabled me to study these documents during a visit to Brussels, in the summer of 1954.

[2] Letter of 29 March 1470. L. P. Gachard, *Collection de Documents Inédits concernant l'Histoire de la Belgique*, I (Brussels, 1823), 214 *et seq.*

[3] *Ibid.* pp. 237 *et seq.*

[4] Lille, Archives du Département du Nord, B. 196, fols. 29 *et seq.*

[5] M.-A. Arnould, *Acquits ou documents justificatifs rendus par le receveur des aides de Hainaut (1496–1540)*. Commission Royale d'Histoire (Brussels, 1941), pp. 44 *et seq.* The higher number of entries is due to the existence of a special book of mesne fees held from ecclesiastical institutions (Chambre des Comptes, no. 1121). Since they were held almost exclusively by laymen—sometimes the same persons who figure in the other registers—and show no differences in kind from all the other entries, I have simply added them to the register of that year. Ecclesiastical property, properly speaking, is almost entirely absent from these registers.

While the registers may therefore be accepted with a considerable degree of confidence as adequate statistical samples, there remains the problem of how far the entries themselves are reliable. The owners of fees and mesne fees declared their value to the ducal commissioners under oath. When, in the 1540's and 1550's, the government of the Netherlands proposed taxes on commercial capital and other mobile property which was also to be declared under oath, the estates objected that this was an invitation to perjury.[1] No such objection was ever raised against declarations under oath about *immobilia*, undoubtedly because the chances of cheating successfully were not rated very high: the whole village knew what houses and fields every one owned. If there was public sympathy for understating the value of one's property, that would apply to all alike. As this inquiry is concerned less with absolute values than with the proportions of the distribution of property, the factor of under-valuation may well be ignored, if indeed it exists at all.

The types of property registered include houses, gardens, cultivated land, forest, rents, labour services (where these still existed) and rights of jurisdiction. Thus, the *chevalier* Mahieu de Lannaix held from the seigneur de Ligne, in 1474, the fief of Dameries. It consisted of a house with two *bonniers* of garden, 52 *bonniers* of arable, 6½ *bonniers* of meadow and pasture, and 40 *bonniers* of forest; together with the rents he received, both in money and in kind, and with the profits from his exercise of high, medium and low justice over his fief, Lannaix had an annual income of 450 *livres tournois*.[2] This was a comparatively large income and, as in all entries, it was estimated as the average of the previous five years. Since Lannaix held his fief from the seigneur de Ligne, he was not a tenant-in-chief. Others, in their turn, held fiefs from him; sub-infeudation was highly advanced in Hainault and often reached five or six degrees, with the count himself sometimes appearing as vassal of the third or fourth degree. Sub-infeudation had long since ceased to have any but a purely formal significance. Such obligations as still attached to fiefs were owed only to the count.[3]

By the latter half of the fifteenth century, serfdom had all but ceased to exist in Hainault; but many feudal obligations survived, especially on larger estates. In 1564, Jehan de Namur, as lord of the fief of Riauwelz, received a *taille* of six *deniers tournois* from every citizen. It was worth a man's while to pay 3 *sous* 4 *denier* for his citizenship of Riauwelz. He could buy or sell heritable property if he paid a simple tax of 5 *sous*: but if a non-citizen was involved, either as buyer or as seller, the lord would claim two *sous* in the *livre* of the value of the sale. Citizens were further absolved from the payment of a property tax of three *sous* per *bonnier* of land, and of the *droite de mortesmains du meilleur cattel*, a tax of two *sous* in the livre on inheritance. Other taxes were levied on citizens and foreigners alike: a tax of 10*d.* on each *bonnier*, rents in money or kind payable at the feast of St John, St Rémy, or at Christmas, and a tax of 6*s.* 3*d.* on each plough horse, together with some further, minor exactions.[1] Riauwelz was not exceptional. There were other large estates on which the lords had similar or even more extensive rights, including entry fines, marriage fees and even occasional labour services.[2] But the tenants were personally free and, on most estates, simply paid their rents to the lord in money or in kind.

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[1] K. J. W. Verhofstad, *De regering der Nederlanden in de jaren 1555–1559* (Nijmegen, 1937), pp. 61 *et seq.*

[2] Chambre des Comptes, no. 1116, fol. 3.

[3] I.e. the duke of Burgundy. How far sub-infeudation played a part in the exercise of noble patronage and influence has never been investigated: it may well have been important.

Apart from rents, the most important source of seigneurial income—and power—was the exercise of the rights of jurisdiction, high, medium or low. In contrast to their practice in most of their other dominions, the Habsburg rulers of the Netherlands made no attempt to prevent landowners from acquiring these rights; they figured prominently in the great domain sales of the sixteenth century.[3] But, as the ducal courts extended their competence and called up more and more cases from the manorial to the provincial courts, rights of jurisdiction gradually lost their value and the financial profits attached to them diminished. It is not possible to evaluate this process in terms of loss of income; but of its existence there can be no doubt.[4]

For most fiefs, the ducal commissioners added up, or averaged out, the various items of income. The investigator has only to take care that a person holding different fiefs and appearing several times in the register is not counted more than once, and that the incomes from his several fiefs are added together. Where, however, the commissioners failed to enter the total income from a fief, it has been necessary to make the calculation for them. Where only the number of *bonniers* or *journaux* of land was set down, this has proved impossible; land values varied far too much to allow a safe estimate for any one fief. Nor has it proved possible to evaluate rights of jurisdiction. The only person who knew about that was the owner; where he failed to give the required information the historian is helpless. On the other hand, it was possible to calculate the value of rents in kind for the registers of 1502 and 1564–73.

The commissioners themselves used conventional and not market prices. The same procedure has had to be followed. For wheat and for several other commodities, these conventional values are sometimes mentioned in the registers. For commodities where this was not the case, values have been calculated from market prices either in Hainault itself, or, where Hainault prices were not available, from market prices in Brabant and Flanders. The method used was to reduce such prices to the conventional level by keeping constant their proportion to wheat prices of which both the market and the conventional levels are known. Where it was possible to check this method by values mentioned in the registers, it was found to give good results. The margin of error due to these calculations is therefore likely to be very small.

Between 1502 and 1564–73 the gap between conventional and market prices tended to increase (cf. Table 4). This meant that where holders of land received rents in wheat or oats or capons, their real income was a good deal higher than the value given in the register or calculated here. The significance of this fact will be discussed below.

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[1] Chambre des Comptes, no. 1122, fols. 159–61.

[2] Labour services—never very heavy—may indicate the practice of demesne farming; but as there is no other evidence for this in the registers, it is, at best, a doubtful pointer.

[3] Cf. Bibliothèque Royale, Brussels, MSS. 13352–69.

[4] H. A. Enno van Gelder, Bailleul, Bronkhorst, Brederode, *De Gids*, C, 1936, p. 217.

The figures in the register may, therefore, be taken as adequate statistical samples of income from real property. They do not, however, say anything about income from other sources. Some of the largest landowners, such as the Croy and the Lannoy, had estates in other provinces as well as in Hainault. Many members of the nobility derived large incomes from offices held under the crown or from the ownership of ecclesiastical benefices. Middle-class owners were sometimes salaried government officials, such as Philippe Wieland, judge of the Great Court of Malines and author of the *Antiquités de Flandre*; or, more frequently, they were merchants from Mons, Valenciennes, Ath or towns outside Hainault. For these latter, land was only a subsidiary source of income. Many small holders can hardly have lived on the income from their holdings at all unless they, or some members of their families, supplemented it by working as craftsmen or as spinners and weavers in the growing rural textile industries. All such earnings cannot be evaluated, except in a comparatively few cases.[1] These shortcomings in the sources are most serious in the case of the small-holders for whom income from land was often not even the most important source of income. At any rate, it would be hazardous to draw any but very tentative conclusions about their economic fortunes from the evidence of these registers. But with the larger landowners, and especially with the nobility, we are on safer ground: the great majority of them derived by far the greater part of their income from land. Thus, while the registers do not give a complete picture of agrarian society during this period, they do give a very adequate account of the economic fortunes of its upper layer.[2]

Table 1. *Conventional Prices,* 1502 *and* 1564–73

Prices per *muid* in £ *s. d. tournois*

Year	Wheat	Rye	Barley	Oats	Spelt	Capons (each)	Chickens (each)
1502	3 0 0	1 15 0	1 7 6	1 11 0	1 7 6	0 2 6	0 1 2
1564–73	10 0 0	6 0 0	5 0 0	5 0 0	5 0 0	0 6 3	0 3 1

The results of the statistical analysis of the figures derived from the registers are set out in Table 2 and in Fig. 1 on p. 7.[3]

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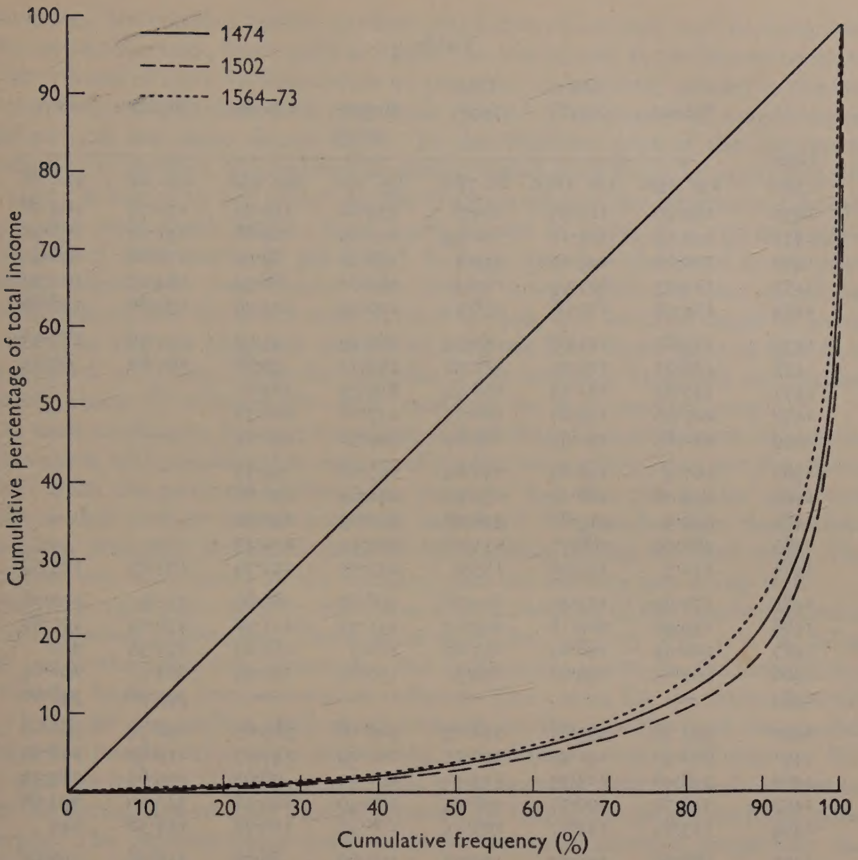
[1] Dr H. A. Enno van Gelder has collected a large quantity of material on personal incomes and property in the sixteenth century. Inevitably, most of this relates to the nobility and only a few instances come from Hainault. I would like to take this opportunity of thanking Dr Enno van Gelder for allowing me access to his notes and for his generous advice on problems connected with the economic and social structure of the Netherlands during the sixteenth century. It is to be hoped that his very valuable material will be published soon.

[2] The censuses compiled in 1570 for the levying of the duke of Alva's '100th penny' attempt to give figures for total income. Unfortunately the Hainault accounts do not distinguish between *mobilia* and *immobilia*. But in Brabant, which was more urbanized than Hainault, the value of *mobilia*, including government annuities (*rentes*), amounted to only 20%. M.-A. Arnould, *L'Impot sur le Capital en Belgique au XVIe Siècle*, Le Hainaut Economique, 1 (Mons, 1946), 44 and *passim*.

[3] I would like to acknowledge my great debt to Mr J. Johnston, of the Department of Economics of the University of Manchester, and to Mr E. Nixon, of the Shirley Institute, for their help and advice on the statistical work in this paper.

Table 2. *Income from feudal property in Hainault*

	1474				1502				1564/73			
%	No.	Aggregate income of group (£)	Average income (£)	Percentage of total	No.	Aggregate income of group (£)	Average income (£)	Percentage of total	No.	Aggregate income of group (£)	Average income (£)	Percentage of total
100	2,147	67,502	31·45	100	2,469	91,624	37·11	100	778	72,419	93·07	100
Top 75	—	—	—	99·1	—	—	—	99·5	—	—	—	99·1
50	—	—	—	96·4	—	—	—	97·1	—	—	—	96·3
25	—	—	—	89·4	—	—	—	91·2	—	—	—	88·4
10	215	52,431	244	77·7	248	74,348	300	81·1	78	53,564	687	73·9
5	107	45,427	424	67·4	124	65,499	528	71·3	39	44,316	1136	61·1
Nobility	139	42,231	304	62·1	212	63,423	299	69·3	107	44,180	413	57·1
Non noble	2,008	25,271	12·59	37·9	2,257	28,201	12·49	30·7	671	28,239	42·08	42·9
Q1		£2. 2s. 10d.				£1. 19s. 3d.				£6. 4s. 5d.		
Median		£5. 0s. 6d.				£5. 0s. 5d.				£15. 8s. 1d.		
Q3		£12. 17s. 3d.				£13. 3s. 1d.				£50. 17s. 8d.		
Skewness		0·4623				0·4535				0·5887		
Entries without ascertainable value		90				158				77		



The diagonal line is the line of equal distribution of income and the areas enclosed by this diagonal and the actual curves is a measure of the inequality of distribution. The graph starts with the poorest section of the community, while the figures in the table indicate the richest sections; i.e. the richest 10% of the population are those between 90 and 100% in the graph.

From the income figures it is clear that landed property was divided very unevenly in Hainault, and this disparity between the incomes of rich and poor became even greater in the course of the 28 years between the compilation of the first two registers.[1] It was a period of declining agricultural prices, punctuated by violent short-term fluctuations. Unfortunately, we have no price lists for Hainault before the year 1500. But the economic relations between Hainault and Flanders were sufficiently close to make their price movements very similar. Table 3 (*a* and *b*) shows agricultural prices in Flanders during this period.[2]

The last quarter of the fifteenth century was a disastrous period for the southern provinces of the Netherlands. Charles the Bold's and Maximilian of Austria's wars with France imposed a crushing burden of taxation on the

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[1] This disparity was much greater than it was in some parts of Italy at the same time: cf. H. G. Koenigsberger, *The Parliament of Piedmont during the Renaissance, 1460–1560*; Studies presented to the International Commission of Representative and Parliamentary Institutions: IXth International Congress of Historical Sciences, Paris, 1950 (Louvain, 1952), pp. 92 *et seq.*

[2] Calculated from H. van Houtte, *Documents pour servir à l'Histoire des Prix de 1381 à 1794* (Brussels, 1902).

Table 3*a*

Date	Wheat	Oats (hard)	Oats (soft)	Butter	Cheese	Barley	Rye
				100 %			
1500	29*s.* 4½*d.*	12*s.* 11½*d.*	8*s.* 7¾*d.*	£5. 18*s.*	29*s.* 4½*d.*	27*s.* 2*d.*	37*s.* 6*d.*
1470	130·46	110·95	103·7	179·66	119·84	171·77	161·78
1471	132·54	104·16	100·34	207·79	129·68	147·22	156·45
1472	120·69	149·15	149·4	198·30	68·07	176·66	136·45
1473	134·03	127·93	123·49	162·71	86·59	184·03	131·54
1474	154·29	170·06	158·21	220·33	124·50	176·66	146·66
1475	179·82	125·07	131·13	169·49	94·04	154·58	181·33
1476	136·01	122·99	122·22	162·71	92·88	165·62	93·33
1477	147·85	161·34	158·44	213·55	124·81	—	—
1478	227·56	159·87	168·75	217·28	108·78	—	—
1479	222·83	190·35	189·69	299·32	202·14	—	—
1480	207·3	146·84	137·84	207·28	93·77	—	—
1481	233·08	188·19	175·92	241·69	136·86	—	—
1482	442·3	213·81	216·08	301·69	220·52	—	—
1483	462·04	288·73	271·06	299·49	214·43	—	—
1484	171·3	157·56	155·9	272·03	132·74	193·85	163·54
1485	172·94	124·45	124·78	196·62	85·67	150·9	137·78
1486	139·92	209·18	209·02	131·35	111·36	276·03	200·88
1487	290·04	198·22	197·68	160·5	184·85	272·35	320
1488	287·13	199·92	199·3	157·62	192·95	283·4	291·64
1489	—	—	—	—	—	345·96	346·66
1490	494·75	395·67	378·13	410·16	385·69	198·74	186·66
1491	292·40	141·43	140·5	101·69	147·07	219·61	237·33
1492	338·46	214·35	213·42	101·69	98·05	295·65	285·33
1493	310·72	200·77	198·95	169·49	220·52	345·96	394·66
1494	175·83	132·87	129·51	108·47	110·78	154·58	144
1495	126·99	109·72	109·95	101·69	86·79	118·99	96·88
1496	113·75	128·62	126·62	94·91	81·68	119·61	89·79
1497	137·64	170·06	158·68	96·61	85·80	182·55	157·77
1498	194·75	116·35	116·20	195·7	96·01	169·30	181·33
1499	167·36	122·76	120·83	106·77	112·32	184·02	155·54
1501	150·03	139·35	138·42	111·86	102·11	159·47	130·66
1502	209·9	158·64	156·83	123·72	124·30	225·72	193·33
1503	255·27	138·58	137·38	147·45	124·5	228·19	292·12
1504	162·62	193·51	181·36	188·13	181·68	198·74	160·0
1505	161·94	200·61	200·57	122·03	208·74	196·90	152

Table 3*b*. *Mean of indices in five-yearly periods*

Date	Wheat (%)	Oats (hard) (%)	Oats (soft) (%)	Butter (%)	Cheese (%)	Barley (%)	Rye (%)
1470–4	130·4	132·45	127·02	193·75	105·73	171·26	146·57
1475–9	182·81	151·92	154·04	212·47	124·53	160·01	137·33
1480–4	303·20	199·02	191·36	264·43	159·66	193·85	163·54
1485–9	225·5	182·94	182·69	136·52	143·7	265·72	259·37
1490–4	322·43	217·01	212·1	178·30	192·42	242·91	249·59
1495–9	148·09	129·5	126·45	119·13	89·25	154·89	136·26
1500–4	175·56	146·01	142·79	134·23	126·51	182·42	175·82

provinces. Destructive border warfare was followed by civil war in 1485 and, even more ruinously, from 1488 to 1490. The loss of over 6,100 houses revealed by the census of 1501—a loss of over 21 per cent—is a sinister pointer to the fate of the country population during those years.[1] The census of neighbouring Brabant tell the same dismal story. In the Walloon part of the quarter of Brussels[2] the number of inhabited houses declined from 6,175 in 1472, to 5,011 in 1496—a loss of 19 per cent.[3] In the Walloon part of the quarter of Louvain the losses were much worse: from 2,485 houses in 1472, to 1,257 in 1496—a decline of very nearly 50 per cent.[4] In both quarters the losses in the open country were even more severe than in the towns; 46·6 per cent of all the households outside the towns were so poor in 1496, that no taxes could be levied on them at all.[5] In Hainault conditions may not have been quite as bad as in the quarter of Louvain; but the deputies of the estates of Hainault complained bitterly about the soldiery who had 'eaten up the poor country people'.[6]

In such conditions, it is not surprising to find that the nobility and other great landowners with considerable reserves of capital were able to ride out the storms better than the peasants. Often, the peasants' loss was the nobles' gain and many added to their estates and their incomes.[7] No wonder then that, unlike Flanders, Hainault remained loyal to Maximilian during the civil wars. The province was dominated by the nobility, and the nobility was doing well.

Between 1502 and 1564–73 there was a clear reversal of the trends dominant in the previous generation. The Lorenz curve for 1564–73 (Fig. 1, p. 7), lying well inside the other two, shows that the extreme inequality in the distribution of income has now been somewhat reduced. The values for the lower quartile (Q1) and for the median (Mi) about trebled; i.e. the incomes from the smaller properties roughly kept pace with rising agricultural prices (cf. Table 4). But the average income of the upper 10 and 5 per cent did little more than double, and the percentage of total income received by this upper group declined quite sharply. The greatest gains were made by the medium-sized properties: the value of the upper quartile (Q3) nearly quadrupled. This comparatively large shift in Q3 is the reason for the greater skewness in the frequency distribution of the incomes in the 1564–73 register.[8]

For the sixteenth century we have price lists for Hainault itself.[9] Table 4 shows that wheat prices rose by about 400 per cent in the period between the last two registers; but the prices of other foodstuffs did not rise nearly as rapidly. It was a period of relative agricultural prosperity for those who could take advantage of the good market for cereals. Unfortunately, we have no census of hearths for Hainault in the sixteenth century; but if we accept again the evidence from the neighbouring districts from Brabant, we can see a very distinct improvement. In the open country of the Walloon part of the quarter of Brabant, the number of inhabited houses had increased by 45 per cent by the year 1526, and in the Walloon part of the quarter of Louvain by nearly 110 per cent.[1] Developments in Hainault are likely to have been, at least, in the same direction. There were no major catastrophes, such as civil war, until the time when the third of our registers was already being compiled; but there were the usual intermittent border warfare with France and the inevitable depradations of the garrison troops.

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[1] Cf. above, p. 2.

[2] The province of Brabant was divided into four quarters: Brussels, Louvain, Antwerp and Bois-le-Duc.

[3] J. Cuvelier, *Dénombrements de Foyers en Brabant* (*XIVe–XVIe siècles*) (Brussels, 1912), pp. clxii and ccxxxiv.

[4] *Ibid.* pp. clxi and ccxxxiii.

[5] *Ibid.* p. ccxlii.

[6] *Relation de Jeannet de la Ruyelle, 1482*, ed. L P. Gachard, Bulletin de la Commission Royal d'Histoire, ser. 3, I (Brussels, 1860), 338 *et seq.* *Relation des états généraux tenus à Malines...1492*, *ibid.* IV, 332 *et seq.*

[7] This did not, of course, apply to all nobles. Cf. *Relation de Jeannet de la Ruyelle*, p. 338.

[8] The coefficient of skewness is taken as $\frac{Q1+Q3-2\,Mi}{Q3-Q1}$.

[9] I. Delatte, 'Prix et salaires en Hainaut au 16e siècle', *Annales de la Société Scientifique de Bruxelles*, ser. 3, 1937.

Table 4. *Hainault*

Years	Wheat prices (per *muid* of wheat) Average yearly price in 5 years			Index 1500–1505=100
	£	*s.*	*d.*	
1500–5	5	18	6	100·0
1505–10	5	13	6	95·8
1510–15	6	1	9	102·7
1515–20	5	19	10	101·1
1520–5	11	2	6	187·8
1525–30	8	8	5	142·1
1530–5	9	5	11	156·9
1535–40	12	14	3	214·6
1540–5	11	0	5	186·0
1545–50	10	15	0	181·4
1550–5	14	14	7	248·6
1555–60	19	8	1	327·5
1560–5	16	6	5	275·5
1565–70	19	11	0	330·0
1570–5	25	2	5	424·0

	Wheat Index 1500–10=100	Butter Index 1500–10=100	Eggs Index 1500–10=100
1500–10	100·0	100·0	100·0
1511–20	110·2	106·3	104·4
1521–30	123·7	134·4	117·4
1531–*1538*	165·3	137·5	130·4
1539–50	173·7	162·5	165·2
1551–60	288·1	216·9	234·8

	Salt herrings Index 1500–10=100	Salt Index 1500–10=100	Olive oil Index 1500–10=100
1500–10	100·0	100·0	—
1511–20	108·3	128·8	100·0
1521–30	137·5	200·0	124·1
1531–*1538*	116·7	162·5	110·4
1539–50	129·2	—	—
1551–60	183·3	—	165·5

While the general economic background of the sixteenth century is fairly clear, the fortunes of the different classes are rather more problematical. For the holders of very small properties the evidence is somewhat contradictory.[2] In the countryside of the Walloon quarter of Brussels the number of 'poor' houses declined from 46 to 38 per cent, up to 1526;[1] but in the quarter of Louvain it rose from 62 to nearly 70 per cent, and this despite the remarkable increase in the number of inhabited houses.[2] If we follow Professor Postan's method of using the price of butter to see whether the mass of the population had sufficient money left over, after paying for bare necessities, to indulge in such a 'semi-luxury',[3] then the fact that butter prices lagged far behind those of cereals would suggest that there was no increasing demand for it and that the standard of living of the mass of the population did not materially improve during this period. This conclusion is born out by what is known about wage rates in Hainault.[4] Nevertheless, the sharp decline of the late fifteenth century seems to have been halted and it is fair to suggest that those with land, even small holdings, did relatively better than wage-earners.

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[1] Cuvelier, *op. cit.* pp. cclxxiv and cclxx.

[2] Apart from the difficulties of drawing conclusions from the registers about them which were discussed above, p. 5.

The most striking feature of the 1564–73 register is, however, the relative decline in the income of the upper 10 per cent as against the advance of the middle income groups. There is no very obvious reason why these latter should have done so much better than large owners in a period of rising agricultural prices. It is very likely that Professor Tawney's arguments for the decline of the English aristocracy and the rise of the gentry hold good for Hainault. As in England, the Hainault aristocracy were largely absentee landlords, deriving their income from rents which it was difficult to raise. They were unable to take advantage of favourable market conditions to the extent that cultivators of medium-sized properties did. But this argument must remain an hypothesis until it can be checked by the study of the accounts of a number of individual estates.[5]

While we know very little about the movement of rents, the registers provide some evidence of their composition. Where a landowner received rents in kind, the value of these rents moved parallel with market prices and he suffered no loss from their rise. Table 5 shows the proportions of total income received in this form.

At no time did anyone in the upper 5 per cent receive rents in kind alone; but fifty-one out of the 124 members of this group in 1502 received composite rents, and for these fifty-one rents in kind amounted, on the average, to almost one-third of their income. By 1564–73, only five out of the thirty-nine in the similar group still received composite rents, and even for them the proportion of their total income which this represented had become negligible. By contrast, the middle group had maintained its rents in kind much more successfully. Whether this was a deliberate policy, or simply conservatism, it is impossible to say; but it undoubtedly helps to account for their economic advance at the expense of the large owners. For the lowest income group, the figures of this table probably mean not so much the receipt of rents in kind as a traditional valuation of the yield of their holdings, and it is therefore best not to attempt to draw conclusions from Table 5 for this class.

Since all rents in kind are calculated according to the conventional values of the registers (Table 1) their real values, in terms of market prices, were much

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[1] Cuvelier, *op. cit.* pp. cclxxxii *et seq.*

[2] *Ibid.* p. cclxxxii.

[3] M. Postan, *The Trade of Medieval Europe: The North*, Cambridge Economic History of Europe, II (Cambridge, 1952), 209.

[4] Delatte, *op. cit.* p. 23.

[5] This is not the type of research which can be done in short visits to Belgium. No such work has yet been attempted by local historians, and it may well be difficult to find estate accounts. But at least one set, that for the *seigneurie* of Gaesbeke, in Brabant, is deposited in the Bibliothèque Royale of Brussels, MSS. 19,240, 19,242 and 19,247.

Table 5

	1502 Rents in kind only					1502 Rents in kind and money				
Intervals	Items	(1) £	Average (£)	(2) cumulative total income (£)	(1) as percentage of (2)	Items	(1) £	Average (£)	(2) cumulative total income (£)	(1) as percentage of (2)
Under £5	471	942·22	2	2,619	36·0	31	37·85	1·22	2,619	1·4
£5 and under £112	362	5,376·56	14·85	21,665	24·8	139	2,103·7	15·13	21,665	9·7
£112 and over	0	0	0	67,340	0	51	21,453	420·647	67,340	31·9
Totals		6,318·78		91,624	26		23,594·55		91,624	25·8

	1564–73 Rents in kind only					1564–73 Rents in kind and money				
Intervals	Items	(1) £	Average (£)	(2) cumulative total income (£)	(1) as percentage of (2)	Items	(1) £	Average (£)	(2) cumulative total income (£)	(1) as percentage of (2)
Under £15	113	801·35	7·09	2,586	31·0	7	43·93	6·27	2,586	1·7
£15 and under £382	111	6,257·08	56·37	26,272	23·8	26	1824	70·2	26,272	6·9
£382 and over	0	0	0	43,561	0	5	1,363·33	272·67	43,561	3·1
Totals		7,058·43		72,419	24·45		3,231·26		72,419	4·5

The right-hand section, 'Rents in kind and money', represents those properties in which income was received in both forms. Col. (1) shows the aggregate value of rents in kind received in this composite income. Col. (2) is the cumulative income of all properties in each of the three groups. The intervals represent the three groups, i.e. incomes below the median, incomes between the median and the top 5 %, and the incomes of the top 5 %.

higher than is indicated by Table 5—an added advantage for those who had managed to keep them. On the other hand, rents in kind sometimes formed part of total income figures given in the registers, so that real income in such cases was rather higher. Against this, rents nominally in kind were sometimes in fact paid in money. At other times, a lord coming to visit his estate, might demand grain and capons from his tenants until he left, when rents would again be paid in money.[1] These uncertainties may, to some extent, cancel out; but while it is wise not to press the evidence of rents in kind too far, it is still very suggestive, even if not entirely conclusive.

It now becomes possible to draw some conclusions about the social and political history of Hainault in the light of the economic evidence of the registers. During the first three-quarters of the sixteenth century, the peasantry—the mass of the lower income group who held land as owners or tenants—managed to hold their own in the face of rising prices far better than they had done in the period of falling prices in the latter part of the fifteenth century. This may well be one important reason why they did not join the German peasants in their great revolt of 1525 or why only very few of them embraced Anabaptism, the craftsman's religion of social protest. Calvinist preachers, appearing in the late 1550's, had their greatest successes among the craftsmen of the towns and the full-time (and often unemployed) rural textile workers of the Walloon industrial belt, from Hondschoote in the north-west to Valenciennes and Mons in the south-east. In 1563, Tournai and Valenciennes became centres of Calvinist revolts. At the time of the Union of Arras, the magistrates of Mons were very frightened of popular anti-Spanish and anti-Catholic riots. But the mass of the peasantry took no part in any of these movements.

At the other end of the social scale, the position of the nobility was more complex. Hainault was the home of many of the greatest noble families of the Netherlands. The vast clan of the Croy, with their many famous titles, such as Chièvres, Roeulx and Aerschot; their relatives, the Lannoy, made famous by the Viceroy of Naples, captor of Francis I at Pavia; the Ligne; the Lalaing, counts of Hoochstraeten; the Boussu and the Rolins, whose fortunes were made by a chancellor of Philip the Good—all these had vast estates in the province, even while they rarely lived there. Below them were the hundreds of lesser nobles.[2] These nobles, and especially the high nobility, all but monopolized the upper 2½ per cent of the entries in the registers. Their share of total income dropped from 59 to 47 per cent between 1502 and 1564–73. Nevertheless, it is unlikely that their economic position seriously deteriorated in the sixteenth century. Their influence at court, their monopoly of provincial governorships, of high military and court offices, and their claim to the disposal of the fattest ecclesiastical benefices gave them opportunities for making up losses of income from their estates which were denied to the lower nobility. They remained loyal to the crown until Philip the Second's methods of government drove a few of them into half-hearted but disastrous opposition.

Below these top 2½ per cent, there were successful merchants from Mons and Valenciennes, or lawyers holding high offices in the provincial courts or the central administration; they owned estates as large as those of any knight and sometimes enjoyed the *haute justice* as well as any *écuyer*. The 107 members of the nobility in the register of 1564–73 represents a much higher percentage of total entries than did the nobility in the earlier registers. That, in spite of this fact, the nobility as a whole had lost ground heavily (Table 2) shows that the incomes of many of them had fallen, and had fallen below those of many *bourgeois*. Yet, it is a debatable point how far the sixteenth century may be regarded as a period of long-term crisis for the Hainault nobility. Philip the Second's minister, Cardinal Granvelle, thought that the opposition of the *grands seigneurs* was motivated by their desire to extricate themselves from heavy debts. This may have been more true of the lower than of the high nobility whom the cardinal had primarily in mind. But sixteenth-century noblemen were not unduly worried about debts.[1] What mattered more was that the income from their estates declined[2] and that it declined at a time when alternative income, from offices under the crown, was reserved to the high nobility or the comparatively few who could hope for more modest local offices. The central government and the hated lawyers were, moreover, steadily encroaching on their remaining seigneurial rights. In 1520, a proclamation prohibited the levying of new tithes and sought to abolish feudal rights existing for less than 40 years. In 1531, the crown forbade lords to exact gifts or new services from their tenants.[3] The decline of income from the exercise of the rights of jurisdiction has already been mentioned. If the decline in the real income of the lower nobility was, in fact, due to rising prices, then it was probably not spread evenly throughout the first three quarters of the sixteenth century but concentrated in the 15 or 20 years before the outbreak of the great revolt, the years after 1550, when prices rose much more rapidly than before. Thus, if there was a crisis, it was a comparatively sharp and sudden one, aggravated by demobilization from the *bandes d'ordonnances*, the aristocratic Netherlands cavalry, after the treaty of Cateau-Cambrésis, in 1559.

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[1] There is no mention of this in the registers; but Dr Enno van Gelder's documents show at least one case where this happened.

[2] I have included among the nobility anyone described as *chevalier*, *écuyer* or *seigneur de*. . ., unless the registers state specifically that he was a *bourgeois*. Ladies are classified in the same way: *dame de*. . . or, more usually, as the widow of *seigneur*. . . .

These developments would certainly account for the growing discontent among the nobility in the 1560's. Calvinist propaganda had its successes among them, though few were given to religious fanaticism on either side. Many joined the Compromise, the opposition movement led by Brederode and Louis of Nassau, and some signed the petition of 1565, at the presentation of which the famous name *gueux*, beggars, was first applied to them. One incomplete contemporary list names nineteen Hainault nobles among them, as against twenty-one from Flanders, forty-six from Brabant, fifty-nine from Holland and eighty-seven from Friesland.[4] A few Hainaulters, such as Marnix de St Aldegonde, took a leading part in the Orangeist revolt. But the great majority, with the Duke of Aerschot and the Count of Boussu at their head, remained loyal to the king. Despite the decline of their incomes, the nobles maintained their dominant position in the social and political life of Hainault. The economic advance of the middle income group, shown in the registers, was not nearly sufficient to upset the essentially aristocratic nature of Hainault society. Together with the nobility of

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[1] Permanent obligations on estates, such as annuities to sisters or mothers-in-law, are usually mentioned in the registers. These have not been taken into account in this analysis unless they formed part of the income of another entry. Every owner of an estate had obligations of one form or another, and nearly all noblemen lived to the limit of, or beyond, their income. Moreover, most annuities were paid and received within the same class.

[2] Cf. Table 2 and above, p. 9.

[3] H. Pirenne, *Histoire de Belgique*, III (Brussels, 1907), 256 *et seq.*

[4] F. Rachfahl, *Wilhelm von Oranien*, II (Halle, 1908), 567 n. 1.

Artois, the nobles of Hainault took the lead in forming the Union of Arras and disrupting the united front against Philip the Second which the Prince of Orange had built up with so much patience after Spain's military power had collapsed in 1576. Whenever there was a serious threat of social revolution—from the breaking of the images in 1566, to the aggressive democratic dictatorship of the Ghent Calvinists, in the late 1570's—the Hainault nobility closed their ranks and united for the preservation of the social *status quo*, even if this meant submission to the rule of Spain.

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SEEBOHM'S TRIBAL SYSTEM OF WALES

By TIMOTHY LEWIS

I

IN vol. vi (1954), 297–304 of this *Review* I examined what may be called the two foundation documents upon which Dr Seebohm had based his reconstruction of the tribal system of Wales. These were the *gwely wyrion* or *wiryon*, and the *gavael*, which he had found in the thirteenth- and fourteenth-century records, mostly of North Wales. He had found the *gwely* of *gwely wiryon* translated as *lectus* in these records, and it was accepted as a valid translation, and interpreted as such. He did not find the *wyrion* translated, though it is found in these records; but it seemed to be the usual Welsh word *wyrion* 'grandsons', and he assumed that the whole expression *gwely wyrion* meant 'the bed of grandsons' though it was in reality, as he used it, the bed of a grandfather. This bed was said to include all the offspring of a grandfather down to these grandsons after whom it was named. All these were regarded as having sprung from the same bed; and it was held by some who had accepted Dr Seebohm's exegesis, that the four generations slept in this same tribal bed, and that as late as the twelfth century. Dr Seebohm found the word *gavael* used often in these records, and he assumed that it was the same word as the *gafael* of the older Welsh law texts, and that it meant the 'fork' or 'post' that supported the roof-tree of the old timber house; and, as the law texts say, there were six of them in the king's hall. It was not clear how this *gafael* was related to the 'tribal bed', but it was assumed that somehow *gafael* was a *subsection* of the 'bed'. The 'bed' itself was interpreted as a symbol of a family of four generations, and Professor Meitzen drew a sketch of this four generations' tribal house based upon bits taken from Welsh and Irish documents.

Dr Seebohm did not find this 'grandsons' bed' in the old laws of Wales; but as it had the appearance of being more primitive than anything in the economy of those laws, and as he had no doubt about his interpretation of the two words, *gwely wyrion*, he assumed that the Records were a truer or fuller mirror of tribal Wales than the older laws. The Denbigh records belong to A.D. 1335, and the laws are traditionally attributed to King Howel the Good who died A.D. 949, though the oldest known MS. of these laws belongs to the twelfth century. Sir Paul Vinogradoff gives his reasons for preferring these records.

> It is among the Celts that the tribal system of land tenure is most developed and best recorded. The detailed and accurate descriptions of tribal arrangement in the Welsh surveys compiled for the use of English conquerors give a complete insight into the principles governing a tribal community.... We may say that the Welsh surveys of which our Denbigh Record is the best existing example....[1]

It has been suggested that in so much as the 'tribal bed' is not discoverable in the native law texts, it may be a later development; but as it is accepted by all the 'tribalists', it is not necessary to enlarge on the date of the institution here. Having laid down the foundations of his reconstructed tribal Wales, Dr Seebohm went forward to explain how the tribe was built up. The issues of the various

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[1] P. Vinogradoff, *Historical Jurisprudence* (1920), I, 308.

'grandsons' beds' were the tribes; but there was a large number of people outside and below these 'free tribesmen' as he named them. We showed that *gwely wiryon* meant simply 'true' or 'untarnished blood', and not 'grandsons' bed' at all; and that *gafael* was not a fork supporting a roof tree, but that it was the same word as the 'gable' of the English 'house-gable', and the South Wales 'gale-rent'. Thus Dr Seebohm's tribal structure as built upon the above foundations collapsed completely. But we must examine the people outside the free tribesmen as they have been described to us, to see what has happened to them after this collapse of main structure of the tribal society. It is proposed to show that the non-tribesmen, and the 'register land' on which they lived, and the 'dung-mayor' who was over them, can be explained reasonably and in detail by showing that Dr Seebohm and Professor Vinogradoff were using the technical terms and structure of the medieval 'Gild Merchant' and treating that as the serf class outside the free tribesmen. These technical terms, 'register land', 'dung-mayor', 'co-tillage' or 'co-aration', used by Dr Seebohm to build up the Celtic tribal system, were misinterpreted just as we saw *gwely wiryon* and *gafael* were.

The reader will doubtless find it difficult, possibly too difficult, to believe that a large part of the Tribal System of Wales is really no other than a 'Gild Merchant'; and I refused to believe it myself for a while, though I could not accept the philological arguments by Sir John Rhys and Sir E. Anwyl in support of Dr Seebohm's and Professor Vinogradoff's interpretations. In order to show what has happened, three or four sections of the Rolls of the Gild Merchant of Shrewsbury dated A.D. 1209 may be quoted. They were published in 1825;[1] and studied later by Professor W. Cunningham[2] and the Rev. C. H. Drinkwater;[3] but as Dr C. Gross is probably more convenient we shall quote from his standard work.[4] Dr Gross tells us that the earliest distinct reference to the Gild Merchant occurs in a charter granted by Robert Fitzhamon to the burgesses of Burford A.D. 1087–1107 (Fitzhamon was the conqueror of Glamorgan). The ancient Gild Rolls of Shrewsbury consist of the names of Gildsmen of A.D. 1209, but one infers from the first roll that a Gild Merchant had existed there earlier. Shrewsbury, or to give it its old Welsh name 'Pengwern', was formerly the capital of the principality of Powysland, and was intimately associated with North Wales, and soon after 1209 it was taken by the men of North Wales. The earliest Charter of Shrewsbury is dated 1189, and as there was a Gild Merchant there before 1209, both gild and borough are much older than the records upon which Dr Seebohm relied.

The first Gild Merchant Roll begins:

Sanctus Spiritus assit nobis. Nomina illorum qui sunt in Gilda Mercanda in burgo Salop', et quorum patres prius non fuerunt in libertatibus Gilde. Anno .xi. Regni Regis Johannis, et quorum finis. .V. *sol.* iiii. *d.* (30 names follow here.) De forinsecis qui intraverunt Gildam et de fine eorum. (56 names follow here, with their payments varying from half a mark to 10*s*. On this roll are endorsed upwards of 300 names.)

The second Roll begins:

Memorandum de Gilda mercanda burgi Salop' ad Quartam assisam. Anno .xi. regni regis Johannis in festo Sancti Bartholomei. De illis quorum patres fuerunt in gulda, un[a] assisa De xxij. *d.* apponitur. (169 names, followed by '.iiii. *d.*' and sometimes by 'primo' or 'secundo' are given here. This Roll is endorsed: Memorandum de ultimis qui intraverunt assisam gilde primo. Anno .iiii.to regni Regis Henrici filii Regis Johannis. [A.D. 1220.] 350 names follow.)

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[1] H. Owen, T. B. Blakeway, *History of Shrewsbury* (1825), I, 102 *et seq.*

[2] *Trans. R. Hist. Soc.* IX (1895), 99–117.

[3] *Trans. Shropsh. Arch. Soc.* VIII (1896), 21–43.

[4] *Gild Merchant* (Oxford, 1890), pp. 210 *et seq.*

The fifth Roll says:

> Rotulus de forincesis de Gylda mercantoria ad assisam novam.... Anno regni regis Henrici filii Regis Johannis tricesimo sexto. [A.D. 1252.] (234 names with a few names of women among them as there are in some of the other Rolls.)

The sixth Roll says:

> Rotulus de illis qui quatuor denarios sunt pacaturi. Nomina Theynesmen. (12 names, apparently those of the principal people in the town. 368 names follow. The seventh Roll relates to foreigners of the Gild and contains 117 names; and the two remaining Rolls belong to the same year, and contain the names of 263 foreigners.)

All the theories about the 'non-tribesmen' ultimately turn upon the meaning of their name, used chiefly in North Wales documents, i.e. *aillt, meibion eillt, eillyon*, etc., and there is no general agreement about the origin or history of this name, though it is made to mean 'serfs' of some kind. The following are the explanations given by responsible scholars who have studied the subject during the last sixty years or so.

Mr Hubert Lewis[1] said that

> the Welsh word *aill* seems to be the same as the Irish *aile*, both meaning 'other', 'strange', etc.; whence the Irish *alaim*, 'I foster', 'protect', etc., with the past participle *ailte*, 'fostered', 'protected', etc. The Welsh has preserved only this part of the verb—viz. *aillt*, 'derived from a verb long since obsolete in Welsh'.

Dr Seebohm[2] says:

> the word *aillt* is believed to mean 'a shaven or tonsured person'. *Aillt* means in old Welsh *shaven* or *tonsured*, the verb being in modern Welsh *eillio* (to shave), Irish *altan* (a razor).... I am indebted to my friend Professor Rhys for this information.

Sir John Rhys[3] explains the meaning in these words:

> *Alltud* means one of another people or country—a foreigner, and is equivalent to Anglo-Saxon *el-theod.* It has nothing to do with *aillt*, which in the early laws is usually *mab eyllt* (*eiglld*), or *mab eill*, or *mab eillt* = a shaven fellow—i.e. a slave, plural *meybyon eillion*... the word has its congeners in *eillio* (the act of shaving), and *ellyn* (a razor), Irish *altan.*

Sir J. E. Lloyd[4] says:

> the *aillt* or *taeog*, for he was known indifferently by either name, as well as by the borrowed one of 'bilain', was distinguished in many ways as belonging to an inferior social grade. (He adds in a footnote:) *Aillt* is the usual term in Venedotian, *taeog*, and *bilain* in the other codes. *Aillt* is connected by Whitley Stokes (*Urkeltischer Sprachschatz*, 21, as modified by p. 327) with the Irish '*alt*', '*ailt*' = house; and *taeog* is no doubt from 'ty', but the meaning is 'a slave *having* a house', and not, as the '*verna*' of Davies, *Dict.* (1632) suggests, 'a slave born in the house'. '*Alltud*' and '*aillt*' have been much confused by late writers, but in the authoritative legal texts they are always carefully distinguished.

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[1] *Ancient Laws of Wales* (1892), pp. 23 *et seq.*

[2] *Tribal System in Wales* (1904), p. 119.

[3] *The Welsh People* (1902), p. 191 n.

[4] *History of Wales* (1911), I, 294.

Mr H. Lewis had confused two different words: *ail* (other), cognate with Latin *alius*; and Irish *alim* (I nourish), cognate with Latin *alo*, and his Irish *ailte* is cognate with the Latin *altus* high. 'Fosterage' was well known in Ireland and in Wales, but it was the sons of nobility who were fostered and not serfs. There is no doubt that slaves had their heads 'shaven' in ancient times, but the only instance brought as evidence by Sir John Rhys was that of Kulhwch in a Welsh tale known as *Kulhwch and Olwen.* Kulhwch was a near relative of King Arthur, and he is advised to go to his uncle to have his hair trimmed with golden shears and comb, because he wanted to appeal to Arthur for help in winning Olwen for his wife. There is no mention of 'tonsure' in the story. One finds 'joculatores' tonsured once or twice, but the only persons regularly tonsured during the period covered by the laws were the priests, but they are never called *aillt*, though in Welsh-Latin documents papal 'Bulls' were signed by the 'Servus Servorum Dei'. Sir Ifor Williams[1] had accepted the 'tonsured slave idea' and says: 'Were the *meibion aillt* in the habit of holding a feast when they began to shave their beards, i.e. when they came of age. The Greeks did so. *Mab aillt*, a servant born and bred on the land. He could be sold with the land. Compare the Welsh *cyf-aillt* 'friend: one bred in the same house' (translated). The Stokes' book quoted as his authority by Dr J. E. Lloyd is a kind of dictionary of primitive Celtic, and the leading words are hypothetical primitive Celtic words reconstructed from Irish-Welsh, Breton, etc. words, and arranged, not according to the Latin or Greek alphabet, but according to what is called the *Devanagari* alphabet of Sanskrit, and it is not easy for a student unused to it to find his way about in it, or to look up a word in it. As Sir J. E. Lloyd's[2] chapter on *Early Welsh Institutions* has been much quoted as the highest authority on this subject, it is advisable to see what Dr Whitley Stokes says in his *Sprachschatz* (1894), p. 21. In discussing *alto* he gives Irish *alt* 'height'; Welsh *allt* 'rupes'; Latin *altus* 'high'; and adds Irish *alt*, *ailt* 'house' ... *aillt* 'verna' from **altjos*. On p. 20 he discussed *alo* 'I nourish'; part.pass. *altos* found in Irish *alim*, cognate of the Latin *alo*. 'I nourish', 'support', etc., and he refers us to **kom-altio-s*. This will be found on p. 87 where he says that this appears in Irish as '*comalte* Pflegebruder + Welsh *cyfaillt*, *Cyfaill*, friend' and refers us back to *alo* (p. 20). Then in the *Nachträge* on p. 327 he tells us to read **kom-altjo-s* for **komaltio-s*; and bids us to insert after **altjos* (as above): 'these can hardly be quoted here, but rather compared with the Sanskrit *patala*, roof, "thatch".' On the whole one would be reluctant to depend on this, for most of it cancels out, particularly when one realizes that Dr Stokes got his *aillt* 'verna' from the Dictionary of 1632, and Dr Davies got his idea of 'verna' from the Bible, for the word is not found in the Latin texts of the Welsh laws at all. One would rather trust what Dr Thurneysen has to say about the Irish *alim* 'I nourish', 'support' in *Walde*[3] under the verb *alo* and this gives no support to Dr Lloyd. Notwithstanding this, the new Welsh University Dictionary,[4] though it rejects Dr Lloyd's etymology, accepts his explanation of the word that *aillt* was a slave, bondsman. On the other hand Professor J. Lloyd-Jones,[5] in his comprehensive collections of words from early Welsh poetry, says (*s.v. eillt*) that the word originally meant 'nurtured', 'one of noble up-bringing', but that it lost caste and finally came to mean 'carl'. All of them depend on their idea of the etymology of the word *aillt*; and then the class of people that bear the name is made to fit the etymology. Thus Dr J. E. Lloyd[1] says:

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[1] *D. ap Gwilym* (Bangor, 1921), p. 132.

[2] *History of Wales* (1911), pp. 283–319.

[3] *Lateinisches Etymologisches Wörterbuch* (Heidelberg, 1910).

[4] *Geiriadur Prifysgol Cymru* (1950).

[5] *Geirfa Barddonniaeth Gynnar* (Cardiff, 1946).

> In view of what has been said in the early chapters of this History, one may therefore without undue boldness recognize in these *aillts* and *taeogs* the remnant of the Iberian people. The oldest tillers of the soil in Wales, reduced to servitude by wave after wave of Celtic conquest, by the might of the ancestors of the free tribesmen, whose institutions are now to be considered.

Professor Vinogradoff[2] was of similar opinion as he tells us:

> The bulk of the *nativi* evidently came from the remnants of the aboriginal population which held the country before its invasion by the Celtic tribes. We find the recognition of this fact in Irish accounts. Even if no recognition were forthcoming we should have to surmise something of the kind as there is ample anthropological evidence of strong pre-Celtic elements in the composition of the Welsh-Irish and Highland Scottish people, and we should have to assign these pre-Celtic elements, in accordance with the usual course of events in history, the lowest place in social organization. (His authority here is W. F. Skene, *Celtic Scotland*, III, 139.)

These are large conclusions, and they are mainly based upon the etymology of *aillt*. As we suggested above we are going to submit that this technical name *aillt*, *mab aillt* is the Welsh form of the English word *yeld*, *yield*, i.e. gild; and that the documents which are taken from the records and the law codes of North Wales can be explained better, both philologically and historically, on this supposition than in any other way. No one has found *aillt* in Welsh meaning a 'house', or 'fosterson', or 'fosterbrother', or 'cyf-aillt' as men 'joined together in the bonds of friendship' on the supposition that *aillt* means 'joint', *iunctura* as the University Dictionary says, for *aillt* is never known in Welsh with these meanings. There are well-known Welsh words for 'house', 'joint', 'fosterage' and 'tonsure'; but *aillt* is not found with any of these meanings. Nobody, as far as I am aware, has tried to explain the expression *mab aillt*: but it is curious that *aillt* and *mab aillt* are used as if they were synonymous; and the laws frequently use *aillt* and *alltud* ('serf' and 'alien') as if they were of the same meaning, and this happens in 'authoritative legal texts' notwithstanding what Sir John Rhys and the *History of Wales* say.

II

The earliest example of the word *eillt* is that found in the Welsh poem called *Gododin*, that is, if the opinion of the latest editor that the essence of the poem belongs to the sixth century, is accepted. We are assured that gilds were known in England considerably earlier than the Norman Conquest. But I have not seen evidence of any gild as early as the sixth century. As the poem mentions the Normans, the Danes, Scutage, etc., that brings parts of it down to gild times. The poem contains three references to *eillt*, and on p. 19 in a stanza referring to the men of Lloegr, i.e. England, it says: *eillt wyned klywer e arderched* (the *eillt* of Gwynedd, i.e. North Wales, hear their splendour). Dr Seebohm saw that the *eillt* belonged to the law codes of Gwynedd, and so do the *eillt* of this poem; but the poet's *eillt* are noted for their splendour and are far removed from serfs; but the text does not tell us who they were. There is a fourteenth-century triad[3] which tells us that there were three kings who were of *meibion eillon*. They were Gwryat son of Gwryan in the North; Cadafel in Gwynedd and Hyfeidd in South Wales. Dr J. E. Lloyd,[1] following Mr Egerton Phillemore's note;[2] and Mr Kermode's account of *Crux Guriat* discovered in the Isle of Man[3] is inclined to believe that this Gwriad was the father of Merfyn Frych, a stranger who possessed himself of the throne of Gwynedd; and Merfyn is said to have come from Manaw (Isle of Man) and had married the daughter of Cynan, and Rhodri the Great was their son. Gwriad died in A.D. 844. He was not a Gildsman, but, as we saw in the Gild Merchant Rolls of Shrewsbury of 1209, the foreigners far outnumbered the townsmen of the Gild, and on the second roll, we saw that a whole block of gildsmen were 'sons whose fathers before them had been members' but who paid half fines or fees. The Isle of Man in Gwriad's time was the centre of the Danes, and they were great traders, and so it was most natural to describe them as *meibon eillon* and equally natural for the poet to wonder at their splendour. The *Hyfeidd*, the *mab eillt* king of South Wales, was, presumably, the king of that name, 'the terror of the wealthy "clas", of St Davids', a contemporary of Asser and a vassal of Alfred the Great. The MS. of the poem containing the reference to the 'splendour' of the *eillt* of Carnarvon and Anglesey belongs to the thirteenth century, and the MS. of the triad about the three kings *meibon eillon* belongs to the fourteenth century. So the Shrewsbury Gild Merchant Roll is older than either. Zeuss[4] published a Cornish gloss *els privignus*; *elses* gl. *filiaster*, and suggested that they were related to our *aillt* (*colonus*, *servus*), but that has not found favour with Celtists.

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[1] *History of Wales* (1911), p. 297.

[2] *Growth of the Manor* (1905), p. 25.

[3] *Red Book of Hergest*, ed. Rhys and Evans (Oxford, 1887), I, 308, 18.

In the Welsh law[5] texts this is the oldest reference to *eillt*: *mab eyllt maynorauc a uo bengebyr ar e tyr eiusdem precii est et mayr* (the gloss in the printed text belongs to the editor and is not in the MS.). This appears in the Vespasian E. XI.[6] text as: *Mab eilt mainorauc .i. qui mainaur habuerit. in qua eclesia sit. tantum est ejus galanas quantum prepositi*; and on the same page the '*prepositus vel mab uchelur*' appears; and Dr Seebohm and others considered the *mab uchelwr* as the North Wales equivalent of the South Wales 'breyr'. Dr Lloyd[7] says: 'In the free tref the landowner was the man variously known as the *uchelwr* (high man), *gwrda* (goodman) and *breyr*'; and he quoted Gerald as saying that 'the realm of Deheubarth [South Wales]...though much larger than either Gwynedd or Powys, is not so desirable a heritage, by reason of the number and insubordinate temper of its *uchelwrs*'. The *breyr* of South Wales is not explained, but I have no doubt that it is the Welsh for 'burgess'. So the *eillt* might be a king, and there were at least three of them in the Danish period; he might own a manor with a church belonging to it; and he might be an '*uchelwr*, high man' or a 'burgess', and in a position to cause much trouble. Anyone who had a church became a freeman; but students have insisted on treating the *aillt* as a serf, and they even quote the explanations which the editor of the *Ancient Laws* often inserted in the texts without realizing that they belong to A.D. 1841, and that the Latin words he used are usually taken from classical Latin, and are not taken from the Latin of the laws. *Aillt* varied as much in meaning from time to time as 'thane' in English documents, but any explanation of *aillt* found between 1200 and 1841 is pressed into service to support a theory.

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[1] *History of Wales*, p. 323.

[2] Owen, *Pembrokeshire*, III, 207.

[3] *Zeitschr. für kelt. Philologie*, I, 48–51.

[4] *Grammatica celtica* (2nd ed. Berlin, 1871), p. 1068.

[5] Pen. HS. 28, p. 15 in *Anc. Laws*, II, 769.

[6] See *Anc. Laws*, II, 879.

[7] *Op. cit.* pp. 298, 303.

Much use has been made of *cyfaillt*, a derivative of *aillt*, following Dr Whitley Stokes' explanation in deriving it from the Celtic of that remote period before the Brythons and the Gaels separated. At that time *aillt* is said to have meant '*Pflegebruder*'. We saw that Dr Stokes had to alter his formula even then. The abstract noun based upon *Cyfaill* is *Cyfeillach*; and in South Wales this usually means 'society' and corresponds to the '*seiat*', i.e. 'society' meetings of a Chapel. This supplanted an older word *Cyfeddach* an abstract noun from *Cyfedd* (convivium), and *Cyfeddach* was the most usual word for *compotatio*, *convivium*, and *convivium* was used also for 'gild', though it had a wider meaning as one sees from the *convivium episcopi* of Llandav.[1] *Cyfeddach* is used in the laws of Wales for king's council as well as for carousal. This *Cyfeddach* was the common word for the assembly of saints in Heaven, but no one would use it now in that sense for *cyfeillach* has supplanted it and *cyfeillach* had become respectable in Wales with the 'gild', while its 'high men' and *Cyfeddach* had lost caste. A near parallel may be seen in another name for a medieval gild which is still in use, though it also has lost its original meaning. The word *mygedol* is in use today for 'honorary', as in 'honorary secretary' for a man who serves without salary; but *myged-orth* was common in Glamorgan once for a 'religious fraternity' and *myged*=Lat. *amicitia* which like the old English *freondscipe*[2] had the sanction of law behind it, and Geoffrey of Monmouth[3] uses *foedus amicitiae* though they were not 'gild merchants' any more than the thieves' 'gegildan' mentioned by Miss Bateson.[4] Welsh laws, medieval poetry, theological writings, tales, all take these terms and institutions for granted, but they are now passed by unnoticed. *Mygedorth* was the religious fraternity founded by a bishop, teacher or saint; and the word is formed like the *gwely-gordd*, i.e. the group of blood kinsmen. Every 'gild' had two aspects: *amicitia* or friendship for those within, and *inimicitia* for those outside, and *inimicitia* appears in Welsh as *anniuiged*, *aniuyget*,[5] i.e. the feeling that a man was helpless, and unable to avenge the slaying of his friend. *Myged* (amicitia) belongs mostly to Glamorgan and the old Celtic monasteries, and its fate, through overlooking the old institutions, has been worse than that of *gwely* (blood) and *aillt* (gild) because it is authoritatively said to mean 'funeral pyre' and, like those words, to be evidence of survival from a very remote period. It seems clear that all these technical terms, by means of which the Celtic tribal system has been built up, must be considered anew; for they have been explained by rewriting them as it is thought they appeared at that remote time before the Irish and Welsh separated, and then to fit these hypothetical forms with the meanings necessary to the hypothetical tribal system, i.e. as Dr Kuno Meyer used to complain, 'to explain the obscure by the unknown'. The Shrewsbury Gild Merchant of 1209 gives us gildsmen, gildsons, gild-daughter, and the majority of them were foreigners and tradesmen of low degree apart from twelve Thanesmen. Scottish Burg Gilds[6] had also Gildsmen, Gild-sonnes and Gild-dochters; and we hold that *eillt*, *meibion eillt*, and *merch mab eillt* correspond in name and status to these. In addition to the Shrewsbury Rolls, the Charters of the old borough of Kenfig will greatly help us. Kenfig also had a Gild Merchant, and it was a 'Commonwealth', with a Piepowder Court, and borough lands, and it was described as a 'Towne for Marchandize'. The whole will become clearer when we see the place set for these *aillt* in the tribal economy. In his book Dr Seebohm[1] says:

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[1] Evans and Rhys, *Liber Landav* (Oxford, 1893), p. 272.

[2] R. Schmid, *Gesetze der Angelsachsen* (Leipzig, 1858), p. 583.

[3] *Hist. Reg. Britt.* XI, i.

[4] *Medieval England* (1905), p. 130.

[5] *White Book*, ed. D. G. Evans (1907), col. 58.

[6] *Ancient Laws and Customs of the Burghs of Scotland 1124–1707* (1868) p. 69, § xi.

> The Venedotian Code states that the maer and canghellor are to regulate the king's *aillts* upon their *tyr kyuryw* or *register land*. And in another passage it states as follows: Geldable land is not to be divided between brothers, but the maer and canghellor are to share it equally between all in the *trev*, and on that account it is called *tir kyuryw*.
>
> From these passages it appears that the land of the *maerdref* was of the nature of such regulated land (i.e. in the nature of *trefgevery*).
>
> These tenants [non-tribesmen] are described in the Codes as *taeogs*, or *aillts*, and they are sometimes located on the *maertref* of the prince, and sometimes in *taeog-trefs*, i.e. in separate *trefs*, and not mixed up with tribesmen (p. 116).
>
> Placed in a *maertref* or *taeog-tref* in '*tref gevery*' without rights of inheritance (margin, p. 116).

Students have found it difficult to imagine the kind of tribal economy implied in this description. What was 'register land' and 'register tref'; and how did these 'non-tribesmen', who seem to have been placed in a kind of compound apart from the tribesmen, and without right of inheritance—how did they live? Having discovered the 'grandsons' tribal bed' Dr Seebohm went on to discover suitable institutions to fit that scheme; and he thought he had found it in this 'register land' and 'register *trev*'. Sir John Rhys might have drawn his attention to the texts he had used; but Sir John[2] himself was convinced that Dr Seebohm was right, for he says that the non-tribesmen, or strangers in blood, were settled upon the estates of the chieftain...and called *taeogs*, or *aillts* or *alltuds*, and held land by the tenure called '*tref gevery*', the holding of *tir cyfrif*, or 'register land' as opposed to the tribesmen's holding in *gwelys*. Likewise Sir J. E. Lloyd[3] says:

> Perhaps the most remarkable fact about the '*taeogdref*' or villein hamlet is that its folk held their land, not by right of kinship, but as members of a community. Land of this description, the Venedotian code explains, is not to be divided (like family land) between brothers, but the king's officers are to apportion it equally between all men of the tref, whence it is known as '*tir cyfrif*' (reckoned land). In the laws, as in the extents, '*tir cyfrif*' is clearly always villein land...there is nothing to suggest that a system of co-tillage existed in medieval Wales among the *free* tribesmen. (Footnote.)

When so many write about 'register' or 'reckoned land' one thinks of 'Doomsday Record', but that is a register of the lands of the landlords and not of the villeins. The first text quoted from Dr Seebohm above calls the land held by the *aillts* '*tyr kyuryw*'; in modern Welsh, *tir cyfryw* means 'land of the same kind', but Dr Seebohm translates it 'register land'. Then he says that the tenure of this land was in the nature of '*tref gevery*'; and he assumes that this *kyuryw*, and *kevery* of the texts are only variants of the same word. They are two quite different words: *kyuryw* 'of the same kind'; and *kyfrif* 'to count'. This last word does mean 'to reckon', as Dr Lloyd translated it, but the adjective *cyfrif-ol* does not mean 'registered' or one who could 'reckon', but a man, usually a business man, of substance. Mr A. Owen translated *tref gyfrif* in 1841[4] as 'register land', but *tref gyfrif* is alike in form and meaning to *tref gyfnewid*, literally 'barter town', i.e. a place where there was a Gild Merchant or market; and *tir cyfryw* was like *cyttir* of Beaumaris, etc., land divided into plots of equal kind, and held by burgesses. *Cyttir* came to mean 'common' land, but it is still found in place names near Holyhead, Dinas Mawddwy, Cardiganshire, Barmouth, etc. near old settlements and boroughs.

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[1] *Op. cit.* p. 18.

[2] *Op. cit.* pp. 400–2.

[3] *Op. cit.* p. 296.

[4] *Anc. Laws*, I, 600–1.

As we have said, the earliest reference to Gild Merchant known to Dr Gross is to be found in Robert Fitzhamon's Charter to the Burgesses of Burford (1087–1107). Fitzhamon was the conqueror of Glamorgan, and Robert Consul, natural son of Henry I, married his daughter, and Robert built Kenfig Castle, near Margam. Merrick,[1] the historian of Glamorgan, says that William, Earl of Gloucester, son of Robert Consul, caused to be rebuilt a 'Town for Merchandize upon the sea banks of Kynfege', and a 'Town for Merchandize' is literally *tref gyfrif*; just as the *Record of Denbigh* describes that place: *Burgus de Denbigh infra muros cum villa mercatura extra muros*. The villa *mercatura* was *extra muros*, and one finds often *mercator itaque foranus*; just as we found the bulk of the members of the Gild Merchant of Shrewsbury to be foreigners (*forinseci*) who were *aillts* and *alltudion* at the same time. The earliest Charter of the Borough of Kenfig, Glamorgan, is of A.D. 1397 given by Thomas le Dispenser, Lord of Glamorgan; but there had been an older one, and Dr E. A. Lewis lists Kenfig as a Borough before 1284, and so it is earlier than the Records used by Dr Seebohm. The Kenfig Charters are published,[2] and the oldest says:

> Concessimus eisdem burgensibus nostris quod ipsi et heredes sui guldam inter eos facere possint quo tempore et quandocunque voluerint ac proficium ipsorum. Et quod distringi non debent pro debito alicuius nisi debitores aut plegii pro eodem fuerint.
>
> Quod de cetere in eisdem nundinis predictus Constabularius seu prepositus teneat omnia placita corone de omnibus feloniis infra bundas libertatis eiusdem ville durantibus illis nundinis factis ac alia placita de transgressionibus debit et convencionibus et aliis diversis contractis ubi cumque fuerint factis.

An English version of A.D. 1330 is given, and on p. 248 it is said:

> No burgess be made or received into the Guildhall except he be admitted by the portreeve, alderman and burgesses so that he may be ruled by the portreeve of the said town.
>
> No stranger shall have free prison in the Guildhall above, but in the lower Prison unless he be a burgess, giveing, yielding and paying within the said town. Burgess yielding and paying by the appointment of the portreeve.

On pp. 181–2 the Charter says:

> Concessiums predictis burgensibus nostris et eorum successoribus quod habeant unum messorem super (idem pasturam) eorum vocatam le Rugge que se extendit in longitudine...qui quidam messor se aliquis alios preterquam burgenses ville nostre predicte inveniat super dictam pasturam manuoperentes cum eorum averiis ipsos attachiari faciat et attachiamenta presentet ad hundredum ville nostre predicte....
>
> Concessimus insuper prefatis burgensibus nostris centum perticas terre in augmentum ffranchesie eorum videlicet de capelle S. Marie Magdalene etc.
>
> Insuper concessimus prefatis burgensibus nostris quod omnes mercatores...qui ex empcione et vendicione vivant infra dominium nostrum...residere debeant in villa de burg et non upland.

Here, then, is a gild with its merchants, 'constable' or *prepositus* or 'portreeve', a coroner, and a fair where burgesses and merchants from outside might chaffer and barter in a free borough, but with very definite rules. The translation says

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[1] Rice Merrick, *A Boeke of Glamorganshire Antiquities* (1578) (ed. J. A. Corbett, 1887), p. 54.

[2] *Archaeologia Cambrensis*, 1871.

'giveing and yielding' within the borough, i.e. 'lottans and scotans', or 'ad gildam et scottum'; and it is clear that the 'giveing, yielding and paying' of the old translation is only another form of expressing that; and it gives the old pronunciation of gild, i.e. *yelde*, *yield* which found its way into Welsh as *eillt*. So 'geve and yelde, as other fremen', 'giveing and yeelding' of Chester and Neath.[1] We said that *cyfeillach* (fraternity) supplanted the earlier *cyfeddach* (*compotatio*), and on p. 180 the Charter says: '*potantus et escotantus et infra guldam mercatoris ipsorum receptus*'.

The translation refers also to the 'government and profits of the *commonwealth* of the burrough and the town corporate of Kenfegg...ordinances for any *commonweale*...*commonweale* profits and comodity of our said burgesses'. There were twenty-nine burgesses in this 'commonwealth' of mercatores who were members of the 'gild', 'guld' or 'yelde' of Kenfig, and they had considerable land under grass and hay, and which 'none shall rent his or their part nor sell the same to any stranger if there will be any burgess that will buy or rent the same upon pain of forfeiture of his or their libertys within the same parcel of meadow'. It says further:

> Item we do order that no one burgess of one part or parcell in the said free common meadow shall not by inheritance challenge two parts or more so that allways the Portreeve and other eight burgesses shall by their discretion divide the same as they shall seem good and convenient to maintain allways the twenty nine within the same. We do bind us and every of us each to the other in the sum of £5.

Every burgess must do his part in enclosing, parking, ditching 'as to the chances by lotts', and 'there shall none of the said twenty-nine pasture or grass the same but by the oyfri'. If a burgess dies without 'lawful heir', then the portreeve is to

> have and enjoy the benefit and profit of the said parcell of hay for one whole year...and after one year the said parcell of hay to be by the portreeve and the burgesses settled to a burgess that hath not a parcell of hay paying therefore 20*s*. per acre to the treasury of the said town for the maintenance allways of the comonical of the said town and burrough.

Here one finds a 'commonweale' or 'commonwealth' under a portreeve or a Constable, and with the land under the authority of a *messor* or 'land *maer*'; while the land is held by the burgesses under strict rules, though each of them enjoys a 'franchesie' or 'liberty', and all in a 'towne for merchandize' with a *villa mercatura*; and all of them 'giveing and yielding' as the *eillt* of the North Wales Records of the time. Dr Hemmeon says that a city like Ghent might be regarded as a 'virtual republic'; but here, in the old borough of Kenfig whose castle was built by Robert Consul, we find it actually called 'commonwealth', 'commonweale', and its public 'comonical'. It was also a 'Towne for merchandize' or '*tref gyfri*'.

III

One of the most primitive aspects in Dr Seebohm's 'non-tribesmen' was that they lived under the authority of *maer y bisweil*, usually translated as 'cow-dung bailiff'.

A royal official with the name translated 'Cow-dung Mayor' has not unnaturally been the subject of considerable speculation, and some facetiousness, for he was the third of the 'customary Officers' of the royal household; and, in a way, it seems to reflect upon the primitive condition of the court itself. The English translation, though justified by Welsh dictionaries, and apparently by the Latin laws of Wales, hardly does this official justice. The name might pass in a lampoon, but one is surprised to find the title in a Code of laws of the twelfth century. Mr Owen in his translation called him 'bailiff of the cow-dung'; and this has been accepted in general, though one or two assumed that the words were used somehow as a metaphor. It is true that *bisweil* does mean 'cow-dung' or 'stale'; and that *maer* meant mayor or bailiff; but the only context in the oldest Welsh copy of the laws where this title occurs is where the officials of the royal court are described; and one is reluctant to admit such an official into the court of a cultured and distinguished Welsh lawgiver king. In the oldest Latin text[1] there is a paragraph about this official thus: 'DE MAYR BYSWEIL. *Mayr bysweyl* [villicus dominicus] debet habere coria boum et uaccarum occisorum in coquina, si eas custodierit per tres noctes....Debet quoque [habere] mercedem de filiabus uillanorum de uillis curie adjacentibus.' In a later Latin MS.[2] this appears as: 'Prepositus fimi debet habere...coria uaccarum occisarum si eas custodierit tribus diebus.'

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[1] Gross, *op. cit.* I, 55.

The oldest MS. leaves it untranslated (the Latin translation in the square brackets was inserted by the translator of 1841), but the later scribe translated it as *prepositus fimi*; but leaves it untranslated in another section.[3] This MS. belongs to the thirteenth century. The usual Welsh word in the laws for *fimus* is *tail*, and *tail* and *fimus* are used there for farmyard manure. There was another word *halou* gl. *stercora*;[4] and the corresponding word *salach* was used in Irish. Sir J. E. Lloyd[5] says of this officer that he was 'the dung bailiff and that this epithet contemptuously distinguished him from the *maer* or bailiff of the *cantred*' [i.e. Hundred]. He has been called also 'cow tending *maer*' or bailiff; but there was an official stockman charged with that duty, the '*pastor communis ville*', and he was not a court official. Here again the whole case has been built up upon the late meaning of the word *bisweil*. Dr Lloyd-Jones pointed out in 1922 that *bisweil* was an English word, i.e. 'besoil'; but unluckily he gives the meaning of 'besoyle' as 'cow-dung'; yet the word and its meaning survive in the modern 'soil'. In the oldest Welsh[6] code *bisweil* is actually used for turf, and the text says that a pig came under the same rules as its mother 'as soon as it overturns a sod with its snout', where the word is *bysuelyn*, i.e. a bit of *bisweil* or soil. That does not help us much in itself until we recall that *stercora* and *fimus* were translated *tom yr heolydd* (dirt or mud of the road or street) and it is found also for *lutum platearum*. *Fimus* is entered five times in O.E. glosses, and glossed each time by 'gore' = 'slush', 'mire'.[7] Way says: A.Sax. gor *lutum*; and *lutum* glosses 'fenne'.[8]

The earliest example of the English word 'besoyle' in the *Oxford English Dictionary* is from 1300 as 'bi-suyled', meaning 'soil', 'dirt', and it is not given as 'cow dung' at that time. Bosworth-Toller gives the verb 'be-sylian' (to soil, stain, *maculare*, *inquinare*), and so up to A.D. 1300 it is not likely that 'bisweil' could have meant anything beyond the soil or dirt of the road, or turf.

Welsh texts tell us that the *Maer y bysweyl* was not to preside over any court other than where the men of the *maerdref* were involved; and another man, trained and tested in law, presided over the *curia*; he was the *iudex curie*. The *prepositus fimi* is responsible for everything the Chancellor commits to his keeping. He is to have the fines of his court together with the heriot of the men and the marriage fees of the women as his perquisites; and he is held responsible for seeing that the king's court is supplied with all the necessary provisions. There is nothing here to suggest 'contempt' or 'cow-dung'. He was responsible also for apportioning the land between the *meibion aillt*, and he was to be chosen from among them. The burgesses of Kenfig, as we saw, were allowed to form a 'gild' at any time suitable to themselves: and they were allowed also:

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[1] *Anc. Laws*, II, 767.
[2] *Ibid.* p. 827.
[3] *Ibid.* p. 833.
[4] *Zeuss*, p. 1063.
[5] *Op. cit.* p. 313.
[6] Lewis, *Gloss. Welsh Med. Law* (Manchester, 1913), p. 50.
[7] A. S. Napier, *O.E. Glosses* (see Indexes).
[8] A. S. Way, *Promptorium Parvulorum* (Camden Soc. 1843).

> Concessimus insuper prefatis burgensibus nostris quod constabularius seu prepositus ville nostre predicte teneat *placita vocata pepoudres* de die in diem quandocunque necesse fuerit. Et omnia alia placita terminentur de mense in mensem coram Vicecomite Glamorgancie in curia ville nostre predicte.[1]

The prepositus, or *Maer*, of Kenfig is thus to hold a *pepoudre* court; and the student of the institutions of medieval Britain has already divined that *Maer y Bisweil*, who presided at a court as described above, corresponds very closely to the prepositus who presided over the Kenfig pepoudres court. We saw that when *bisweil* was borrowed from English, the English word meant 'soil', 'dirt', etc., and *piepowder* meant 'dusty' or 'dirty feet'. Dr Cange, *s.v. pulvereus*, says that the word meant '*advena*, *extraneus*, vulgo *pied-poudreux*' in a charter of A.D. 1100; and Bracton calls the court which dealt with those people 'dustie foote' court, because *pulverulentes habens pedes totam eravisse putetur*; while the Borough Laws of Scotland say: *Si burgenses mercatores et pedepulverosi*, etc.; and in a law merchant case of A.D. 1224–53 we find this: 'Extraneous mercator vel aliquis transiens per regnum non habens certam mansionem infra vicecomitatum sed vagans qui vocatur piepowdrous hoc est Anglice dustifute (A.D. 1224–53).'[2] These 'dustie-foot' people were merchants passing through, and might be from overseas, and in any case non-resident; and when they were involved in a dispute at market or fair arrangements were made to deal with such cases from day to day, and from hour to hour. It was provided in a case stated in the time of Edward IV: *secundum naturam curie pedis pulverisati processum fieri debet de hora in horam a die ad diem*, and the issue was to be decided 'within three tides'. 'Dustie-foot' was an apt description of these mobile merchants; and a 'dustie-foot' court was held in Kenfig. The usual place for it, I think, was by one of the Gates. According to the Borough Rules of Kenfig dated A.D. 1330: 'Item, it is ordained that noe manner of person or persons shall cast noe dust, dung, nor other filth in the streets nor in the town ditches, nor within fifty foot of any of the gates of the said town.'[3] Strict rules were applied to ensure that High Street was kept clean.

Here, in the old town of Kenfig, established by the Norman conquerors, we have a *prepositus* presiding over a '*pepoudré*' court in the main street, and 'fifty foot' of this street must be kept free of 'dust, dung and other filth'. One finds mention of fairs in North Wales called Ffair y Dom (Dung Fairs) where cattle were penned or herded in the main street, and made it filthy. Kenfig burgesses were forbidden to throw *stercora* on the street or milk their cows there, and Scottish burgesses were told: 'ne *fimum* ponatur in foro ud via'. *Prepositus fimi* was the officer who presided over the fair court held in the street. It may be asked if *Maer y Bisweil* of the twelfth-century MS. was the *prepositus* of a piepowder court, why there is no Welsh name for it, for this court was well known in Carnarvon, Criccieth, Beaumaris, etc. in North Wales; and in Kenfig, Cardiff, etc., in South Wales. A common Welsh word for dirt on a road was *llaca*, and there are many places named *Cwrt Llaca* (Court of mud) on the one-inch Ordnance maps (Llandrindod, O–E–11; Abergavenny, B–1; Llandefalle, Carm.). *Tre Llaca* near Cardigan, and *Cwrt Llaca*, though not mentioned in any law document I have seen, seems to fit exactly the 'piepowder Court'. As one finds 'pit' in English place-names where old open-air courts were held ('Moot house pit' where the Hundred Court is),[1] so one finds *pwll Llaca* or *pwll y Llaca* rather often in place-name in Breconshire, Carmarthen and Pembrokeshire, where *pwll* 'pit' is like *pwll-yr-arian* and 'King's Rent Hole'—an old open-air court in Radnorshire. One finds mothers in West Wales threatening unruly children with '*Bowdwr iti*' ('Powder for you'). The mothers do not threaten to use 'powder' to shoot them, but it seems to be a remnant of the old 'powder' court. The 'piepowder' court was known also as *curia pede*, and this seems to explain the title of an important official called *Troydauc* and *Truidedauc*. *Troydauc*, literally 'footman', has several meanings. It is used like the officer *camerarius* 'massaging the king's feet, lulling him to sleep' of A.D. 1174;[2] but he was also an important law officer and was called *rac eistedyat cantref*,[3] president or *Vorsitzer* of a Hundred Court. Like the Chancellor of England he was to sit at the feet of the king on the right. He is called *truidedauc* and his place was *sub pedibus regis*; but *truided*, modern *trwydded*, means a licence to sell beer, tobacco, or to sell by auction, but it meant, among other things, a 'guest', as well as *advena*; and there were three *truyddedawc* in King Arthur's court, but the three were also difficult to please. In Dares Phrygius[4] *trwydded* translates *hospitium*, and *hospitium* in the oldest Latin law text corresponds to *llety* (lodging, stable, room) of the oldest Welsh text, but the *hospites*[5] of the Latin text corresponds to *gwestey* of the Welsh text, and there were always twelve of them in the king's court.

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[1] Kenvig Charters, *Archaeol. Cambr.* IV (1871), ii, 181.

[2] Gross, *Select Cases concerning Law Merchant* (Selden Soc. 1908), p. xiv.

[3] Kenvig Charters, *op. cit.* p. 249.

But it would take us too far afield to follow these twelve here beyond saying that the *trwydded* and *trwyddedawg* clearly point to some court like the piepowder court. Dr Seebohm's non-tribal serfs correspond in nearly every way to members of the Gild Merchant of Shrewsbury and Kenfig. It is sometimes assumed that the Gild Merchant consisted of rich merchants and not of the lowly people called *meibion aillt* in North Wales and *taegion* in South Wales, but the Shrewsbury Roll shows clearly and beyond dispute who the members were. There were ten *villani*, twenty-five bakers, twenty-five mercers, fourteen tailors, five carpenters, five butchers, three smiths, thirteen fishermen, etc. and in a small community like Shrewsbury of A.D. 1209 the twenty-five bakers must have been traders in a very small way. The same applies to the still smaller Gild Merchant of Kenfig. Why were the *meibion aillt* of South Wales called *taeogion*? We saw that Sir J. E. Lloyd explained the name as Dr Davies' dictionary did, but that the serf had a house, and was not a serf born in a house as one finds the *vernaculus* of the Old Testament. In the Cornish Vocabulary published by Zeuss[6] *pobel tiogou* is glossed by *vulgus*; and *tiogou* is the pl. of *tioc* = Welsh *taeog* = Breton *tiec* 'oeconomus'. Words have changed so much from the tenth century onwards, and it is not advisable to explain those early words by using modern dictionaries. Nobody would regard the king's smith, who was one of the royal officers, as a serf, but he is called a *caeth*, and *caeth* is assumed to mean a 'slave'. He was *caeth* because he was 'bound' to do certain service to the king, and because he was 'hired' to do work for others. A thirteenth-century Welsh law text[1] fixes the price for hire of a plough, plough parts, ploughman, ploughboy, and of the oxen according to the place they occupied in the team and it is clear that they were not serfs as the tribalists tell us they were. What were the 'bond tenants' outside the tribe which figure so prominently in Dr Seebohm's system?[2] According to a writer on Llantrisant in Glamorgan,[3] to the east of Kenfig, 'the freedom of the borough is inherited by all the children of a burgess, and is acquired by *servitude* of seven years' apprenticeship to a resident freeman, by marriage with a freeman's daughter, and by election of a jury of twelve burgesses upon paying double fees on admission'. 'Servitude' here as elsewhere in those documents meant 'apprenticeship' and not 'serfdom'. Gavelkind could not apply here, for the lot of a burgess was an indivisible lot and held by 'borough tenure' and was neither *tir gwelyawg* (family land) nor *gafael* (rent paying) but *tir cyfryw*, i.e. the land of *tref gyfrif* or Gild Merchant. *Taeog* then was a householder, the man that is described as *habet domum* in the Records, and in Kenfig, Cardiff, etc. he was a burgess.

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[1] D. M. Stenton, *Engl. Soc. in the Early Med. Ages* (1951), p. 133.

[2] J. H. Round, *Serjeanty*, p. 115.

[3] Wotton, *Leges Wallicae*, p. 584.

[4] *Red Book*, ed. Rhys and Evans, I, 306; II, 16–25.

[5] *Anc. Laws*, II, 751, 894.

[6] *Grammatica Celtica*, p. 1068.

There is a most instructive paragraph in the tale of Manawyddan in the Mabinogion stories[4] which tells of two princes of South Wales whose dominion had been so completely ruined that they had to fend for themselves like Robinson Crusoes in a desert land. After a couple of years they saw it was hopeless and they made for England with the idea of supporting themselves by taking up some trade. They went to Hereford, and took up the trade of saddlers there, but their work was so much superior to the saddles made in Hereford that the Hereford saddlers lost all their customers. The Hereford men belonged to a trade gild, and they decided to kill the newcomers; but when the two princes came to know of this conspiracy they took counsel: one was for leaving the town peacefully, while the other advised killing the saddlers, and he refers to them as *taeogyon racco*. This expression has always been translated 'serfs' or 'villeins'. The princes later took up the trade of shield-makers in another town, but the results were as before, and the shield-makers of this town lost all their customers, and they too decided to kill the two strangers. The princes heard of the conspiracy by the *taeogeu*, and thought it better to move on to another town, and they took up the craft of shoe-makers, thinking that shoemakers would have no heart to fight them. When, however, the town shoemakers saw all their customers going to the two princes, they also took counsel and decided to kill them; and one of the princes asked why take that from the *taeogeu llandron*? Here we have three trade gilds; that of saddlers, shield-makers and shoemakers in Hereford and two other border towns, and in each of the three the gildsmen are called *taeogeu*. The princes may have felt contempt for them, but it seems to me that the storyteller used the term in the technical sense of members of a gild. We do find merchants called *ignobilis mercator* and *diaboli minister*, but the shield-makers referred to the new craftsmen as *kyt-drefwyr*, i.e. 'fellow citizens'. Recall that Hereford was the mother borough of most Welsh boroughs, and it was also the mother borough of some English and some Irish boroughs; and that it was itself a copy of the Breton community of

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[1] W. Evans, *Welsh Med. Law* (1909), p. 107.

[2] *Op. cit.* pp. 116 *et seq.*

[3] *Topograph. Dict. of Wales*, ed. S. Lewis (1833).

[4] *Red Book*, ed. Rhys and Evans, I, 47–9.

Breteuil—a castle belonging to William Fitz Osbern of Chepstow, and the conqueror of Gwent. We found ten villeins in a bunch as members of the Shrewsbury Gild Merchant, and here are members of three craft gilds called *taeogeu* in a technical expression, and they were burgesses protected by charter. There was a piepowder court at Hereford 'being a court by reason of the market there sitting daily from sunrise to sunset at the Guildhall'. There was a case in Hereford in A.D. 1240[1] where the bishop of Hereford complained of six men selling things in the town during the bishop's fair contrary to the liberties granted to the bishop by the king. A certain place is provided where all merchants ought to assemble to buy and sell. These six had sold leathers, etc. just as the two Welsh princes had taken up saddlery. In 1332 at the Fair Court of Wye three or four 'Girdlers' were before the court for having twenty girdles and three pairs of garters garnished with lead and as the men were not really workers at the trade, were not *cinctuarii*—their merchandise was burnt. Because it was assumed that the non-tribesmen were remnants of pre-Celtic peoples who had been conquered, it was readily assumed that anything not easily explained was traceable to that primitive source. Dr E. de Laveleye, in his chapter on 'The Agrarian System of the Irish Celts',[2] after reading Sir H. Sumner Maine's lectures says: 'The little knowledge we possess of the customs of the primitive Celts seems to show that the same institutions existed originally among them as among other nations: joint property, community of wives and cannibalism'; and another French professor found in Dr Seebohm's 'four generation tribal bed' a ready explanation of incest among Celtic gods. He found three such gods whose mothers were known but whose fathers were unknown. We saw that the 'tribal bed' was no bed at all, for the name meant 'pure' or 'whole blood'. Likewise the 'shorn serfs', non-tribesmen remnants of the pre-Celtic inhabitants of Britain reduced to serfdom, turn out to be members of a 'yeld' or gild, most of whom might be *forani* or *alltudion*. The history of the South Wales serfs called *taeogion* is a close parallel. They were not slaves born in a house, or even serfs having a house, but were people of substance.[3] They seem to be similar to the *rustici*, for '*taiauctret* .i. rusticana villa', and *rusticus* was often so called because he spoke *sermo vulgaris*, or because he paid rent. He might possess many hides of land and even a manor with a church on it. One sees from the twelfth-century treatise *De Utensilibus* of Neckham[4] the standing of the *Rusticus* or '*vileyn*':

> Rusticus rure degens...domum habeat munitam corbibus, cumeris vimineis, calathis, cophinis et sportis. (Then he gives a long list of utensils and implements he must have, and the cattle with the buildings necessary for housing them.) Habeat etiam *gladium latum*, etc.

The Welsh *tayawe* possessed a stallion (usually a warhorse in these laws), and swine. It is true he could not sell them without giving to his lord the first offer to buy them. Naturally they were non-tribesmen, for the Welsh tribe of these documents was only a philological myth; and the mysterious 'register town' was only a Gild Merchant. There is no more mystery about it than about the reason why a public house in Scotland is called 'change house'.

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[1] Gross, *Select Cases of the Law merchant* (Selden Soc., 1908), II, i, 110.

[2] *Primitive property* (1878), p. 122.

[3] *Anc. Laws*, II, 901.

[4] *National Antiquities*, ed. T. Wright (1882), I, 110.

IV

'Co-aration' is quite as much a philological myth as 'register town', and it has been seen as one of the most striking signs of Celtic tribalism, and one of the earliest discussed by Dr Seebohm.[1] In his view of it, co-aration was a key which completely fits the lock, and explains the riddle of the English open field system.

There was, according to the Welsh laws, a certain regulated rotation of ownership in the *erws* (acres) 'as they were traversed by the plough' resulting from a well-ordered system of co-operative ploughing. In the *Venedotian* Code (the oldest Welsh version known) especially are elaborate rules as to the cyvar or co-aration, and these expose the system in its ancient form actually at work, with great vividness of detail.

Dr Seebohm assumed that *Cyvar* was literally 'co-aration', and he could not very well do otherwise, for so it had been explained before him. But what was 'co-aration'? The word is given in the *O.E.D.* but the earliest and the only example of its use is taken from Dr Seebohm's volume quoted above. This leads one to think that it was something unknown to English agriculture. Dr Davies' dictionary of 1632 says '*cyfar*, idem quod *cyfair* item *coaratio*'; but part II of this dictionary says: '*coaratio* cyferetri, cyfariaeth', and not *cyfar*, *cyfair* as the first part says; and the first part does not give *cyferetri* at all, and gives an entirely different meaning to *cyfariaeth*. The two parts are by different scholars, but the author of part I was also the editor of part II. Part II is abstracted from a MS. dictionary which is mostly a literal translation of the sixth edition of Thomas Thomas' *Latin-English Dictionary* of 1601. Thomas' dictionary has no such word as *co-aratio* any more than Lewis and Short, or Benoist Goeltzer, or Du Cange or Baxter's *Med. Lat. Word List*, and so Dr Thomas Williams, the author of part II, could not translate here but had to think for himself. As we saw, he explains *co-aratio* as *cyf-eretri* and not as *cyfar*, *cyfair* of part I. Dr Thomas Williams had read the oldest Welsh Law MS. and has written notes on the margin, and it is likely that he had read the oldest Latin MS. The oldest Welsh text does not give *cyferetri* but the oldest Latin MS.[2] says: 'quicumque fregerit *keueredri* sponte sua factam tres vaccas camluru domino reddat; et quicquid coarator suus in illo spatio perdiderit de aratione implere [debet].' This is given in Welsh:[3] 'pwy bynhac a torho kyfar a wnel oe fod talet tri buhyn camlwrw yr brenhin' (i.e. whoever breaks the pact voluntarily made let him pay a fine of three kine to the king). It is found also in another Latin MS.[4] thus:

Siquis firmaverit pactum coarationis .i. *keueredri* cum aliquo et postea fregerit illud debet regi tria animalia transgressionis quod dicitur ille camlwry et ad predictum pactum servandum inviolabiliter redire. et quiquid coarator suus de aratione sua perdiderit in illo spacio implere.

Here, there is only a pact or contract between two to join forces to do their ploughing; and the contract was called *kueredri*. The oldest Welsh Code puts the same custom in quite different words thus: 'puebennac a guenel kenar ae kylyt yaun eu ydau rody bod vrthau a kauaruod e llau ae kylyt, a guedy guenelynt hynny y kadu eny darfey e makal. Sef eu e makal twelve erw.'[5] This is the translation: 'Whoever shall engage in co-tillage with another, it is right for them to give surety for performance, and mutually join hands, and, after they have done that, to keep it until the tye completed: the tye is twelve *erws*.'

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[1] *English Village Community* (1883), pp. 119–20.

[2] *Anc. Laws*, II, 803.

[3] *Welsh Medieval Law* (1909), p. 117.

[4] *Anc. Laws*, II, 855–6.

[5] *Anc. Laws*, I, 314–15.

It is a reasonably good translation, but the translator gave 'co-tillage' for *keuar*, and Dr Seebohm had noted this; but the word *makal* in the Welsh part, which is another name for the *keuar*, is translated 'tye'. As we said, *keueredri* was a *pactum coarationis*, and here *keuar* is explained by *makal* which is translated 'tye'. *Magl* is borrowed from the Latin *macula*, and meant in Welsh a 'spot' or 'stitch' or 'knot'. According to the above text the ploughing pact between two was usually for twelve acres. It should be noticed that *cyvar* was accounted to have the force of a legal pact sealed by 'joining hands', and which ever party broke it had to pay three cows to the king and make good the loss caused to the other party. The actual joining of hands was essential to the *cyvar*. I noted[1] that *cyfaru* did not mean *co-arare* as one would expect, but 'to make an agreement' about the co-tillage, and an expression like *cyfaru ych* did not mean 'co-tilling an ox' but to pledge to supply an ox. Sir J. E. Lloyd says:[2] 'Cyfar = Co-tillage, and *Cyfeir* = a day's tilth, are carefully distinguished in the texts...though not in Aneurin Owen's translation, etc.' What are these words *cyfar*, *cyfair*? *Cyfar* 'pactum' does not seem to be connected with *ar* 'tilth' at all, for it occurs many times in medieval Welsh unrelated in any way with 'co-tillage'. There may be two different words of the same form, but *cyfar* 'pactum' seems to embody the Latin word *arra*, i.e. earnest money to confirm and assure a bargain. Part II of Dr Davies' dictionary gives '*arrha* = Bridyw, arian ernes, ern, gwystl'. Mr Way[3] gives '*ernest, arnest*, hansale...a(r)ra, arabo, strena'; '*Hansale* strena' adding in a note '*arrabo* .i. vadimonium, an hansall; et proprie dicitur *bona arra*'. 'Strena est bona sors, Anglice hansell'. 'To[4] yife erls *arrare*'. A.Sax. 'handselen *mancipatio*'. '*Mancipare*: quasi manu tradere', just as O.E. *handselen* is defined as 'giving into a person's hands'. I understand that *cyfar* was used within living memory in Glamorgan in this sense: when a farmer settled in a new district, it was customary for neighbouring farmers to help him to get things 'ship-shape' by sending their servants, or going themselves to do ploughing or what was most necessary, and this was called *cyfar*. The *Concise Oxford Dict.* defines *han(d)sel* as a gift at the beginning of a New Year, or on entering on new circumstances; earnest money, probably connected with *erles*, arles (penny). In discussing co-tillage in Ireland the best evidence Dr Seebohm seems to have found was that relating to Kells, an incorporated market town in Co. Meath about thirty miles north-west of Dublin. Dr Seebohm quotes from Mr G. L. Gomme's letter to the *Athenaeum*, 1883, describing how the 312 acres owned by the Corporation of Kells were divided into six fields and how they were tilled. The first Charter was granted by Walter, son of Hugh de Lacy, in the reign of Richard I and was a copy of the Charter of Bristol. He quoted also from an Irish law text which says that one grade of Irish people had a fourth part of a ploughing apparatus, and another half the means of ploughing, and he found 'a reference to tillage in common' in another law text. All this does not seem to me to have any relation to a system of co-aration among the Celts in existence early enough to explain the origin of English ploughing customs. They are late, and it would probably be as reasonable to conclude that Englishmen were in the habit of dividing up their knights into fragments because they split up their knight fees into twenty or a hundred parts. One might plead that the Welsh *cyfar* = Irish *comarba* (pronounced *coarb*) = an estate of land held in partnership by different persons, but the Irish way of looking at it seems to have been a near parallel to the Welsh way. We suggested above that the Welsh *cyf* + *ar* meant *pactum*, and that the *-ar* = Latin *arra* (pledge). Professor Atkinson[1] has nearly a page on this *arra* in Irish law texts, but, though he translates it as 'security', Irish law is not very clear on the meaning for it is not a usual Irish law word for 'security'. Several scholars have discussed this Irish *arra* = Latin *arra*, but Professor Thurneysen's explanation[2] seems the most satisfactory and it had to do with pledges for the fulfilling of a contract: *Eides-Gutmachung*. Du Cange, *s.v. arrae*, gives the title of a chapter: *De sponsalibus et arris sponsalitiis*. They all point to the same meaning as the *pactum* of the Welsh law quoted above. Dr Seebohm[3] might have seen that *cyvar* probably meant something other than co-aration for he quotes a triad on 'the bundle of rights acquired by the tribesman at the age of fourteen' called *cyvarwys* which he says meant 'perquisite' or 'customary payment' in the laws. There were three *cyvarwys*: 'five free acres, co-tillage of the waste (*cyvar gobaith*) and hunting'. This *cyvar gobaith* appears to mean 'co-tillage of hope', or 'hope of co-tillage' in the tribal economy; but what could 'co-tillage of waste' mean to a boy of fourteen years? Sir John Rhys had[4] explained (go)*-baith* = *Picti* and had taken this as evidence that the Picts had given their name to such places as *Dyffryn Paith*, and *paith* is still the common word in the Welsh colony of Patagonia for pampas, etc. Now *gobaith* in Welsh law texts meant the 'pledge of succession' given by the king or lord to the one who was to succeed him. *Cyvarwys* itself appears to belong to the important series: *tad-wys* (father right); *mam-wys* (mother right), *mab wys* (right of a son) still used the verb *mabwysiadu* (to adopt a son). Dr Gross[5] says that 'one of the key words (so to speak) of Law Merchant Studies is the "earnest money" represented here by the term *arr*(*h*)*e* or *err*(*h*)*e*'; and I have no doubt that it is one of the key words to explain this *cyf-ar* of Welsh laws and the *arra* of Irish laws. We quoted above from the *Promptorium Parvulorum* 'to yife erles *arrare*' which is taken from a MS. of A.D. 1483; but I have never seen or heard *erles* in Wales except in connexion with the old Norman town of Kidwelly near Carmarthen where the parcel on the Kidwelly common land within the liberty of the Burroughe, 'being within the foure ancient crosses where the cattle fayre hath been usually held was called the *Arles*'. No cattle could be sold without hand-fasting and before witnesses; and the Kidwelly bridge used to be called *pont-ys-powder*, i.e. the Bridge below the Powder (which I presume to have been the old pie-poudre court). Sir Paul Vinogradoff[6] said that 'the history of Great Britain rises on a rock-bed of Celtic institutions and customs'; and it is these institutions and customs we have discussed above.

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[1] *Gloss. Med. Welsh Law* (Manchester, 1913), p. 87.

[2] *Op. cit.* p. 295.

[3] *Promptorium Parvulorum* (Camden Soc. 1843), pp. 142, 226.

[4] Lindsay, *Corpus Glossary*, p. 112, § 115 + note.

Aberystwyth

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[1] *Glossary to the Ancient Laws of Ireland* (Dublin, 1901), p. 77.
[2] *Coic Conara Fugill* (Berlin Academy Abhandlung, 1926), p. 67.
[3] *Tribal System*, pp. 66–7.
[4] *Rhind Lectures in Archaeology* (1889), p. 107.
[5] *Select Cases concerning Law Merchant* (Selden Soc., 1932), p. 1.
[6] *Survey of Denbigh* (1914), British Academy Records, I, v.

SOME PRICE FLUCTUATIONS IN ANGEVIN ENGLAND

By D. L. FARMER

I

At Argentan in July 1171, Henry II and his barons determined to visit Ireland to reduce into submission Strongbow, the Earl of Striguil and Pembroke, whose expedition against Waterford and Dublin had flouted the express command of the king. The comprehensive arrangements made for provisioning the English army in Ireland in 1171 and 1172, and for stocking with food the royal castles during the Rebellion of the two following years, provide a wealth of information on price movements in the major foodstuffs in the later twelfth century. This information is supplemented by the purchases of livestock for the royal manors at certain times during that period, principally in the years 1166–8, 1184–8 and 1194–7. Even in the reign of John, capital investment in the estates of the royal demesne continued; and the Exchequer occasionally subsidized the purchase of stock for the ecclesiastical estates seized by the Crown during the Interdict.[1]

Dr A. L. Poole has published[2] detailed lists of the livestock prices contained in the Pipe Rolls of Henry II and Richard, and the more recent volumes of the Pipe Roll Society allow the study to be continued well into the reign of John. I have also extracted information from the unpublished Pipe Rolls down to the end of John's reign. In this paper I shall content myself with summarizing the information contained in Dr Poole's article, but shall endeavour to give rather fuller treatment to some aspects of those subjects with which he did not deal.

The grain prices are of great importance, in that they provide almost the only evidence of the cost of corn in the forty-odd years before the commencement of the magnificent series of 'Pipe Rolls' of the Bishopric of Winchester. The bacon and cheese entries in the Exchequer Pipe Rolls are of some value. The livestock prices of the early years of John's reign show how deceptive was the comparative stability suggested by Dr Poole's study of twelfth-century prices.

II

The use of Pipe Roll figures involves certain difficulties. Variations in the capacities of measures used present a problem familiar to the medieval economist; the measures employed include summs, quarters, skips, sextars, ladas, and crans. Of these, the summ is by far the most common, and only those transactions measured in summs are included in my graphs and certain of my tables. Occasionally, these summs are described as being by some local standard—that of Norwich[3] or Abingdon[4] or 'Warenges'[5]. These specifically heterodox measures have also been omitted from my calculations. It would, however, be unwise to assume that all other entries do relate to measures of equal capacity, even after the Assize of Measures. For example, the Pipe Roll for 6 John contains the entry '*Comitatus Linc' debet c. marcas pro pace habenda de inquisitione carrucagii, et de uenditione facta per ueteres mensuras*'. On the other hand,[6] it would be impossible to tabulate Pipe Roll prices without making some assumption of this sort. Fortunately, there are for several years sufficient price entries to ensure that means are based on fairly representative measures, and the frequent references in the Pipe Rolls to the purchase of measures *per breve Regis* suggests that some effort was being made by the Crown to introduce common standards, at least for its own use, even before the Assize of Measures. But this factor of error must be remembered in considering abnormal price levels, such as that implied by the purchase of wheat at 4*s*. a summ in Oxfordshire in 1176,[1] the only entry for that year—twice as high as the previous year's level, and more than three times that of the following year.

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[1] Pipe Roll, 13 John, pp. 270–2.

[2] *Eng. Hist. Rev.* LV (1940), 284–95.

[3] Pipe Roll, 20 Henry II, p. 37.

[4] *Ibid.* p. 112.

[5] Pipe Roll, 19 Henry II, p. 63.

[6] Pipe Roll, 6 John, p. 52.

Many entries, over the whole period, come from counties formerly under Danish influence. There is a considerable risk in these cases that the 'long hundred' of 120 may have been used, though even in these counties the prices usually seem to have been calculated by the 'short hundred' of 100. Purchases of livestock (especially sheep) by the 'long hundred' occur not infrequently, but I know of no instance in the Pipe Rolls where it is certain, or even probable, that the long hundred was used in the purchase of grain. Where livestock are concerned, I have been content to follow Dr Poole's calculations.

A further major source of error is introduced by transport costs. In 1171 and 1172, when large quantities of grain were sent to Ireland, it can be shown in most cases, at least, that the cost of transporting the food is listed separately, and that the expenditure on grain '*Missis in exercitu Hybernie*' represents the purchase price of the article, and not the combined cost of purchase and transport. In 1171 the sheriffs appear to have made their own arrangements for sending to Ireland the provisions supplied from their own counties, but in the following year most of the hiring of vessels for the transport of foodstuffs seems to have been arranged centrally through Ralph, the Archdeacon of Stafford. The cross-country movement of provisions normally involved considerable expense, but it still saved the Crown much money, for any attempt to purchase very large quantities of food from an area of two or three counties would have increased the cost very greatly. Thus, in 1171, the hiring of carts to carry 100 summs of wheat from Oxford to Bristol cost 44*s*. 10*d*.,[2] and raised the expenditure per summ from the original purchase price of 1*s*. 3½*d*. up to a total of 1*s*. 8¾*d*.; but this still represented a considerable saving to the king, since he was obliged to pay 1*s*. 10*d*. per summ for wheat bought in Somerset. In many cases it is impossible to tell whether or not transport charges were included in the cost of the article, and the difficulties presented by any attempts to make allowance for transport costs are almost insuperable. For example, conveyance overland was expensive at any time, but more so when winter mud bogged down the carts hired by the sheriff's men; transport by sea was comparatively cheap, for in 1172 the hiring of ships to carry 400 summs of wheat, 300 summs of oats, 100 summs of salt, 100 summs of beans and 200 flitches of bacon from Worcester to Ireland cost £4 6*s*. 10*d*.[3] less than twice the cost of carrying the 100 summs of wheat from Oxford to Bristol in the previous year. Consequently, I have ignored transport costs in preparing the tables and graphs.

The dating of price entries presents a further problem, but the complications of the later Pipe Rolls, in which transactions in the grain of several harvests are included in the same account, appear to be absent. I have regarded as belonging to the same year all the entries in each Pipe Roll, and have dated them according to the year of harvest at the beginning of the Exchequer year. Thus grain purchased in the summer of 1171 will be regarded as produced in the harvest of 1170, and, with all livestock bought and sold in the same Exchequer year, will appear under 1170 in the tables. Dr Poole dated his entries according to the year in which each account ended; his dates are therefore a year later than mine, and this discrepancy must be remembered in any comparison of the figures. Dr Poole's dating is probably more satisfactory for the general historian, but my method facilitates the comparison of prices with those in the Winchester 'Pipe Rolls', and with those furnished by other sources for the later years of the thirteenth century.

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[1] Pipe Roll, 22 Henry II, p. 28.

[2] Pipe Roll, 17 Henry II, p. 131.

[3] Pipe Roll, 18 Henry II, p. 21.

Following Dr Poole, I have made some attempt to disentangle multiple entries, and where it has been possible to do this without risking any appreciable distortion, I have included these entries in my calculations. For example, an account for the Honour of Gloucester[1] records the purchase of forty-seven oxen and four afers for a total of 332*s.* 8*d.* As the oxen far outnumber the afers, it is justifiable to regard the purchase price of oxen as something very close to 6*s.* 6*d.*, and I have included this figure in calculating the mean for the year; I have *not* included an estimated price of afers, for a very small miscalculation in the price of oxen would produce a large error in the figures for the former. I have treated similarly the Berkshire entry for the 10th year of John,[2] when forty-three oxen and two afers were bought together.

My estimations of annual price levels for grain, beans and salt have been obtained by calculating the (weighted) average paid in each county, and by then determining the (unweighted) mean of these county averages, with livestock, cheese and bacon, I have simply calculated the unweighted mean of all the entries in that particular harvest year. Where there has only been a single entry in a county, I have placed that figure in the column of averages, but have enclosed it in round brackets; similarly, a national mean formed from figures provided by only one county has also been enclosed in round brackets.

In every case, prices are given correct to the nearest farthing.

III

It will be seen from the accompanying tables that grain prices were tending to fall in the later 1160's, before experiencing a substantial rise extending over the following years. This trend is clearly shown in the figures for wheat purchases in Worcestershire, given in Table 1; only the first of the price figures appears to include any charge for transport, and then for a distance probably not exceeding fifty miles.

The copious entries for the harvests of 1170–3 are worthy of close examination. The rise in the price of wheat between the first two years is insignificant, and it would at first seem that the extensive purchasing of the 1170 harvest had no effect upon the level of prices in the year following. This, at least in part, could be the result of the different periods of the harvest years at which the grain was probably bought. In the summer of 1171 the sheriffs were obliged to purchase from what was left of the harvest of 1170, while purchases made a few months later would come from granaries newly filled by the harvest of 1171. Moreover,

[1] Pipe Roll, 18 Henry II, p. 21.
[2] Pipe Roll, 10 John, p. 62.

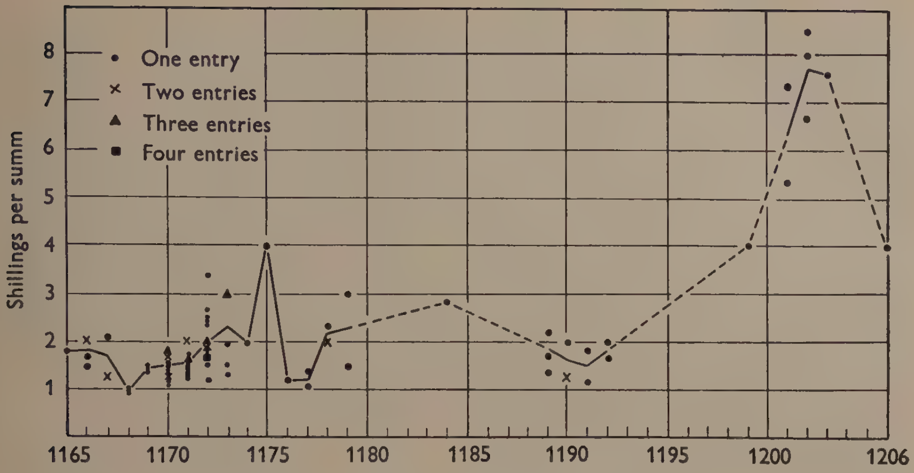

Fig. 1. Distribution of wheat prices, 1165–1206.

Table 1. *Purchases of grain, beans and salt*, 1165–1210

The figures given are *per summ*, and are the unweighted means of the weighted averages for each county.

Harvest year	Wheat		Barley		Oats		Beans		Salt	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
1165	1	9½	—		—		—		—	
1166	1	9½	—		—		—		—	
1167	1	8¼	—		—		—		—	
1168		11¾	—		—		—		—	
1169	1	5¾	—		—		—		—	
1170	1	6	—		—			11¾	—	
1171	1	7	—			8		11½		7¼
1172	2	0	—		1	0	1	11¼	1	3¼
1173	2	3¾	—		—		1	8	1	3
1174	2	0	—		—		—		—	
1175	4	0	—		—		—		—	
1176	1	2½	—		—		—		—	
1177	1	2¾	—		—		—		—	
1178	2	2	—		—		—		—	
1179	2	3	—		—		—		—	
1184	2	10	—		—		—		—	
1189	1	10¼	—		1	0	—		—	
1190	1	7½	1	0		10½	—		—	
1191	1	6	—		—		—		—	
1192	1	10	1	0	1	0		10	1	0
1193	—		—		2	0	—		—	
1199	4	0	—		—		—		2	0
1200	—		—			11	—		—	
1201	6	4	3	8	3	8	4	0	—	
1202	7	8¾	6	0	—		—		—	
1203	7	7	4	10½	—		—		—	
1205	—		—		1	8½	—		—	
1206	3	11¼	3	4	3	4	3	4	—	
1210	—		—		—		—		1	3¼

only three months elapsed between Henry II's decision at Argentan and his landing in Ireland. The speed with which the arrangements were carried out forced the sheriffs to make their purchases over a much shorter period in the earlier year, when the grain bought in local markets for the Crown must have formed a higher proportion of that which was locally available at any particular time than was the case when more leisurely purchasing prevailed in the following year. In some counties the price did rise appreciably—notably in Hampshire, Hereford and Gloucestershire. It is at least worthy of note that many of the higher prices seem to have been paid in those areas which were regarded by Dr Gras at a later time as low price districts,[1] particularly the Western counties around the Severn Valley. Probably the king was buying disproportionately highly in the West, to reduce transport costs as far as possible, and this seems to have gone some way towards creating the market conditions which apparently produced slightly higher prices. But it would be unwise to attribute undue importance to these local variations in prices: their importance is lessened by the factors with which I have dealt in the first section of this paper.

Certain of the entries for the harvests in 1172 and 1173 suggest the influence of kindred factors. In the former year, both in Kent and Nottingham/Derby, there are wide discrepancies in the prices paid for purchases of wheat in different parts of the sheriffs' bailiwicks. No explanation, other than the gradual exhaustion of the market as the year progressed, can be offered for the conditions in which wheat for Chilham Castle cost 1*s*. 6*d*., for Canterbury Castle 2*s*. 4*d*. and for Dover Castle 2*s*. 8*d*. per summ. High prices prevailed in south-eastern England in the succeeding year, when wheat for Colchester Castle, as well as wheat for the castles of Dover and Canterbury, had to be purchased at 3*s*. per summ.

For the next sixteen years, price entries are very scanty. The 4*s*. per summ paid in Oxfordshire for wheat from the harvest of 1175 is probably a freak entry, perhaps the result of an unorthodox measure; but there seems to have been a steep rise in prices, at least in Somerset, at the end of the decade. 200 summs of wheat from the 1177 harvest were purchased in that county at about 1*s*. 4¾*d*. per summ, while the quantities of 200, 100 and 300 summs were bought there after the following harvest at prices of 2*s*., 2*s*. and 2*s*. 4*d*. respectively. A number of entries for the early 1190's show relatively stable grain prices.

The succession of John to the throne was closely followed by wild price fluctuations of a kind unknown in the previous century. These high prices must be attributed largely to the bad weather of 1201 and 1205. Roger of Wendover[2] describes the former year as a time of gales, thunderstorms, hailstorms and cloudbursts—*horrendae tempestates*, *tonitrua*, *coruscationes*, *grandines et pluviarum inundationes*, and his description is largely repeated by Matthew Paris[3] and the 'Flores Historiarum'.[4] Ralph Diceto[5] adds a similar, but independent, comment on the weather in 1201. Four years later, according to Wendover,[6] a most severe frost seized the land from 14 January until 22 March, so that the tilling of the fields had to be suspended, with the result, so the chronicler asserts, that the summ of wheat fetched as much as 14*s*. in the following summer. The price of

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[1] N.S.B. Gras, *The Evolution of the English Corn Market* (Cambridge, Mass. 1926), p. 47.

[2] Roger of Wendover, *Flores Historiarum*, ed. H. G. Hewlett (Rolls Series), I, 312.

[3] Matthew Paris, *Chronica Majora*, ed. H. R. Luard (Rolls Series), II, 476, and *Historia Anglorum* ed. F. Madden (Rolls Series), II, 91.

[4] *Flores Historiarum*, ed. H. R. Luard (Rolls Series), II, 123.

[5] Ralph Diceto, *Opera Historica*, ed. W. Stubbs (Rolls Series), II, 172.

[6] Roger of Wendover, *op. cit.* II, 9.

7*s*. 4*d*. a quarter paid in Norfolk and Suffolk for the harvest of 1201 is almost twice as high as any previously recorded.

During the first decade of the thirteenth century, prices rose to levels which were rarely to be exceeded until the great famine of 1314–16. The harvest of 1202 had to be purchased in Wiltshire for 8*s*., in Oxfordshire for 6*s*. 8*d*., and in Kent for 8*s*. 6*d*. per summ of wheat. Towards the end of the decade, prices fell, and subsequently became appreciably more stable. In 1210, for example, John sold 136 qtrs of wheat from Abbotsbury Abbey at about 1*s*. 6½*d*. per quarter, and a total of 44 qtrs. wheat and 10 qtrs. curail for 67*s*. 6½*d*., presumably all from the harvest of 1209. On the manors of the Bishopric of Winchester, the wheat harvest of 1210 fetched about 1*s*. a quarter more than that of 1208, but the harvests of 1211 and 1213 sold at about 2*s*. 10*d*. and 2*s*. 1*d*. respectively, compared with the 3*s*. 8*d*. which the 1210 crop had realized. The Exchequer Pipe Rolls record the purchase of wheat from the 1211 harvest at a relatively high price, but show that the Crown was able to buy fairly cheaply.

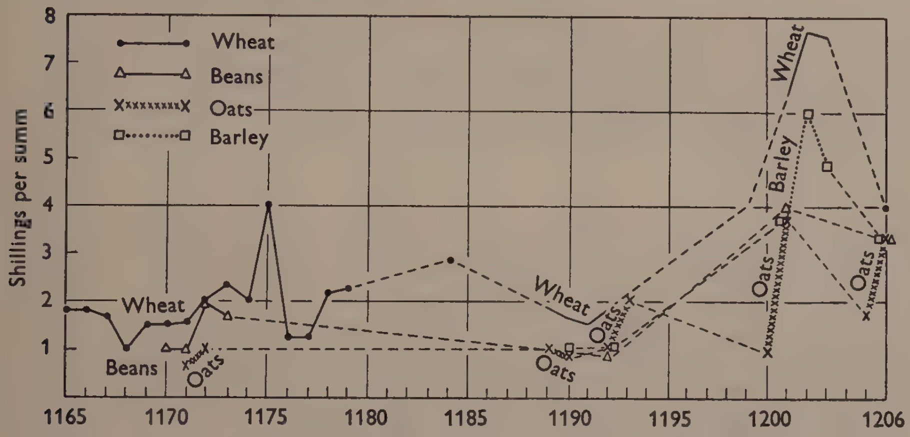

Fig. 2. Relative prices of wheat, barley, oats and beans, 1165–1206.

The fluctuations in the prices of oats, barley, beans and salt bear a close resemblance to those in wheat. However, the cost of beans fell between the harvests of 1172 and 1173, while the price of wheat rose; and the price of barley fell more steeply than that of wheat between the harvests of 1202 and 1203. The high price of oats, compared with that of barley, is a little surprising, since the cost of barley, at least in the later years of the thirteenth century, approached more nearly that of wheat than that of oats. Beans usually cost the king more than either barley or oats. The rather rare salt entries price that commodity at about the level of oats.

Little can be said about the prices of bacon and cheese.[1] In only four or five years are entries relating to these foods sufficiently numerous to remove the danger of serious distortion resulting from the use of un-typical entries. The price of bacon was chiefly influenced by the cost of pigs, but the steep rise between the harvest years of 1171 and 1172 must be largely attributed to the market conditions produced by the emergency provisioning of royal castles at the outbreak of the Rebellion of 1173. The purchase of cheese after the 1172 harvest at a lower price than after the 1170 harvest suggests that cheese was being marketed

[1] See Table 2.

in quantities large enough to remain unaffected by sudden bulk-buying. The high prices paid for weys of cheese produced in Kent in the harvests of 1201 and 1202 need not be taken as an accurate indication of the general price levels of the years following.

IV

The table of animal purchases[1] shows clearly the general stability which prevailed in livestock prices until the last two decades of the twelfth century. The prices of oxen and bulls were steadier than those of afers and cows: until 1195 the mean price of bulls in any year never differed from 3*s.* by more than 4*d.* in either direction. The figure for 1182 is provided by a single entry for a plough team, presumably of eight oxen purchased in Yorkshire at 5*s.* each.[2] While it would be dangerous to regard this as a representative entry, the prices paid for oxen in the six succeeding years are almost 40 per cent above the level paid in the four years before 1182. The price of oxen fell to an average of 3*s.* 4¾*d.* over the seven years from 1192 to 1198; during this period, two out of three comparatively high means were recorded in the years following the harvests of 1194 and 1195, when an extensive re-stocking of royal manors was carried out: 1507 oxen were purchased for stock in the former year alone. Moreover, the re-stocking of royal manors was but one manifestation of the general growth of agricultural investment which commenced in the late twelfth century, and continued throughout the thirteenth century with only temporary recessions. Prices of oxen were generally both stable and low during the last decade of the twelfth century, but, with the opening of the thirteenth century, they somersaulted to twice their previous level. The highest figures in this period were reached in 1204, when a number of multiple entries establish a mean of somewhere between 9*s.* and 10*s.*

Table 2. *Cost of bacon and cheese purchases,* 1171–1208

		Bacon			Cheese		
Year of account	Harvest year	No. of accounts containing entries	Total no. of entries	Mean of all entries *s.* *d.*	No. of accounts containing entries	Total no. of entries	Mean of all entries *s.* *d.*
1171	1170	7	7	1 4½	6	6	4 11¼
1172	1171	6	7	1 5½	—	—	—
1173	1172	11	17	2 1	6	7	4 7¾
1174	1173	6	8	1 7¼	3	3	5 3¾
1189	1188	1	1	(2 0)	—	—	—
1190	1189	5	5	1 5¾	2	2	4 1½
1191	1190	1	1	(1 5½)	—	—	—
1192	1191	2	2	1 4	—	—	—
1193	1192	2	3	1 11¼	—	—	—
1194	1193	1	1	(1 0)	—	—	—
1195	1194	1	1	(1 9½)	—	—	—
1200	1199	3	3	2 3½	—	—	—
1202	1201	1	1	(3 6)	1	1	(9 0)
1203	1202	4	4	2 10¾	1	1	(9 0)
1204	1203	1	1	(2 1½)	—	—	—
1207	1206	1	1	(1 7¼)	—	—	—
1208	1207	1	1	(1 6¾)	—	—	—

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[1] See Table 3; also A. L. Poole, *Eng. Hist. Rev.* LV (1940), 284–95.

[2] Pipe Roll, 29 Henry II, p. 48.

Prices of oxen fell after this year, but from 1206 to 1210 the means remained around, or slightly above 6*s.*

No purchases of afers are recorded after 1199, save in multiple entries from which it is impossible to estimate price levels. In the period 1162–72, afers tended to cost the Exchequer rather more than oxen, with a mean price for those years of 3*s.* 3*d.*, compared with 3*s.* 0¾*d.* for oxen. But by the late 1180's, afers usually cost less than oxen, and after this period never exceeded the price of the latter except in 1195, when the mean price of afers stood a farthing higher at 3*s.* 11*d.* than that of oxen.

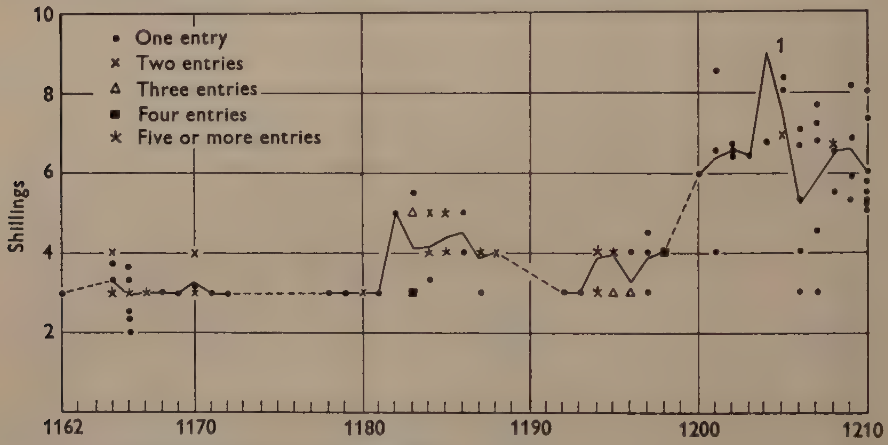
Table 3. *Mean purchase prices of livestock*, 1162–1210

Harvest year	Oxen	Afers	Cows	Bulls	Sheep	Sows	Boars	Pigs
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
1162	3 0	3 0	2 0	—	4	8	8	—
1165	3 3¾	3 5¼	2 7¼	2 8	4½	10	10¼	—
1166	2 11	3 0	3 0	3 0	4	10	10	7½
1167	3 0	3 4	2 8	3 0	4	1 0	1 0	—
1168	3 0	3 0	—	—	4	—	—	—
1169	3 0	4 0	—	—	4	—	—	—
1170	3 3¼	3 6¼	2 11½	3 2¾	4¼	1 0	1 0	1 0
1171	3 0	3 0	2 4	—	4	8	8	9½
1172	3 0	3 0	—	—	4	—	—	8
1178	3 0	3 10½	3 0	2 8	4	1 0	1 0	—
1179	3 0	—	—	—	—	—	—	—
1180	3 0	4 0	3 0	3 0	4	1 0	1 0	—
1181	3 0	3 0	—	—	—	—	—	—
1182	5 0	—	3 0	—	—	—	—	—
1183	4 0¾	3 1¼	3 4	3 0	6½	1 0	1 0	—
1184	4 1¾	4 8	3 4	—	6	1 0	—	8
1185	4 4½	4 6	3 4	3 4	6	1 0	1 0	—
1186	4 6	4 0	3 6	—	7	1 0	1 0	8¼
1187	3 10½	2 8	3 6	—	8	8	8	—
1188	4 0	—	3 0	—	—	—	—	—
1192	3 0	3 0	—	—	5	—	—	1 0
1193	3 0	3 0	3 3	3 3	5	10¾	8	1 0
1194	3 10	3 8¾	3 8½	3 6½	6	1 0	1 0	8½
1195	3 10¾	3 11	3 10¼	4 0	6	1 0	1 0	—
1196	3 3	—	—	—	4	1 0	—	—
1197	3 10	—	3 4	3 4	6	10	—	—
1198	3 0	3 0	3 4¾	3 0	1 0	1 0	1 0	1 0
1199	—	3 0	3 0	—	4	1 0	1 0	—
1200	5 11	—	—	—	—	—	—	—
1201	6 4	—	4 0	—	6	—	—	—
1202	6 6	—	—	—	1 0	—	—	—
1203	6 4½	—	9 1¼	—	—	—	—	2 7¼
1204	9 0*	—	—	—	1 1¾	—	—	—
1205	7 6	—	—	—	—	—	—	—
1206	5 2¼	—	—	—	8	1 0	—	1 8
1207	5 10	—	—	—	—	—	—	2 6½
1208	6 6	—	—	—	10	1 0	1 0	1 6¾
1209	6 6½	—	—	—	—	—	—	2 8¼
1210	5 11½	—	—	—	—	—	—	2 3½

* Approximate only—this includes figures from a multiple entry.

This shift in comparative price levels suggests that afers were by no means gaining favour as plough beasts at the expense of oxen. Walter of Henley, in the best known medieval treatise on agriculture, considered the ox a much more profitable investment than the plough horse, on account of lower feeding costs and greater carcass value when its working days were over. Thus the shift in comparative prices may reflect the increasing scarcity of fodder resulting from the vigorous development of marginal lands in the late twelfth century, and also the enhanced value of foodstuffs for an expanding population.

Cows were generally cheaper than other cattle, and seem to have been rather less affected by the higher prices of the 1180's. In the 1190's, however, cows gained in comparative value: in 1193 and 1198 they cost more than (and in 1194 and 1195 almost as much as) oxen and afers. The price of 4*s.* for cows in 1201 is taken from the account of the Honour of Lancaster,[1] which was able to purchase oxen at the same price, appreciably lower than that paid for oxen by the Bishopric of Lincoln and the Honour of Gloucester in that year; thus the figure of 4*s.* for cows is probably lower than would have been the case had more entries been available. Purchases of cows in Worcestershire and Gloucestershire produce the very high mean of 9*s.* 1¼*d.* for 1203, while the comparatively low figure for oxen is provided by four bought at 6*s.* 4½*d.* for the Honour of Gloucester.



1 Several high multiple entries establish a mean of between 9s. and 10s. for 1204

Fig. 3. Distribution of prices of oxen, 1162–1210.

Save for the two years of large-scale purchasing, following the harvests of 1194 and 1195, the purchase price of bulls remained within a few pence of 3*s.* This is probably explained by the potentially large supply and relatively small demand for bulls; in 1209 the thirty-six manors of the Bishopric of Winchester possessed between them 310 cows and only fifteen bulls. The one bull sold on the Winchester estates in that year fetched a mere 3*s.* 3½*d.*, whereas afers produced an average return of 5*s.* 3*d.* and oxen one of 5*s.* 6*d.*

The price of sheep, after the first years of the 1180's, was generally highly unstable. The early Pipe Rolls record the purchase of sheep at a stable price of 4*d.* or slightly above. By 1187 this price had risen to 8*d.*, but, in common with those of other animals, the cost of sheep fell in the following years, and in 1192 and 1193 they were purchased at 5*d.* each. This price, unlike the prices of oxen and afers, was still higher than that which had been paid in 1162. In 1194 all the 9047 sheep, and in 1195 all but 300 of the 3803 sheep purchased were bought at 6*d.* each, but the sheep purchases in 1196 were made at 4*d.* per head. In the following year, sheep were purchased in Cambridge at 6*d.*, and others sold by the Crown in Cumberland at 8*d.*, in which latter county they were to cost the Exchequer 1*s.* each in 1198. An entry from Somerset and Dorset in 1199 shows a price of 4*d.* and one from the Honour of Lancaster in 1201 gives the cost of sheep as 6*d.* In the following year, 584 sheep (presumably ewes) and 100 muttons were bought in Lincolnshire for sending to Faringdon Abbey at 1*s.*, and in 1204 302 sheep were purchased in Dorset for sending to Dover at about 1*s.* 1¾*d.*, though this may include the cost of transport. In 1207 sheep were bought in Staffordshire for 11½*d.*, but cost only 4*d.* in the Honour of Peveril. The final entries come from Shropshire in 1208, when 180 sheep were bought at 1*s.* and 300 others at 8*d.* As the prices paid for sheep were almost invariably whole numbers of pence, fluctuations which might otherwise have been small appear large. It will be seen that much of the evidence for variations in the price of sheep is provided by isolated references, and, were it not that the pattern of price fluctuation closely follows those of other livestock, one would hesitate to place much confidence in the figures thus provided.

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[1] Pipe Roll, 4 John, p. 159.

The prices of sows and boars varied little—never lower than 8*d.*, never higher than 1*s.* Animals used principally for breeding purposes, as these were, would normally be less subject to price variations than those used principally for food. Indeed, a high price of food (grain or meat) in any year would limit the ability of the landlord to spend money on the expansion of his breeding stock. This factor explains why the price of pigs (*porci*) varies far more than does the cost of sows and boars: the pig was an article of food, whether consumed as pork or as bacon, and consequently the prices of pigs fluctuated with those of wheat and bacon rather than with the prices of oxen and afers. The price of pigs remained comparatively stable throughout the later twelfth century, varying between 8*d.* and 1*s.* But the Pipe Roll account for Dorset and Somerset after the harvest of 1203 records the purchase of 60 pigs at 3*s.* 0½*d.* and of 500 pigs at 2*s.* 2¼*d.*, producing a mean which is twice as high as any previously recorded. The price of pigs continued high but variable throughout the decade.

Certain general trends may be observed in the price movements of different animals. The distinction between those used for food and those used for breeding has already been drawn: and it is possible that the emergence of pigs from or below the level of sows and boars demonstrates the growth of pork eating in Angevin England. This, again, might be attributed to the increasing shortage of good land as the twelfth century drew to its close, rendering the rearing of pigs upon rough and marginal land, or in uncleared woodland, more profitable than that of cattle on good meadow.

Throughout this period, it is perhaps unwise to think in terms of 'price rises'. The level of prices varied enormously from year to year, and it is almost impossible to distinguish with any degree of accuracy between long-term movements, and the short-term rises and falls produced by the effect of the weather upon the harvest, or, possibly, by market exhaustion and high prices resulting from sudden extensive purchasing. It is clear, though, from the evidence of the 'Winchester Pipe Rolls', that the prices paid in average years in the second decade of the thirteenth century were much higher than those recorded in the early Exchequer Pipe Rolls half a century earlier: the cost of grain doubled, while that of livestock rose three-fold.

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WOOL SUPPLY AND THE WOOLLEN INDUSTRY[1]

By P. J. BOWDEN

I

OF the many consequences of the enclosures for sheep-farming in England probably none was more far-reaching yet received less publicity than the changes effected in the character of the English wool supply. In her well-known study of the medieval wool trade the late Professor Eileen Power sought to establish the existence in the Middle Ages of two main breeds of English sheep, these being distinguished by the length of the staple of their wool:

> There was a small sheep producing short wool, prepared by carding and used to make cloth. Larger sheep produced long wool, prepared by combing and used for lighter worsted and serges.
>
> The short-woolled sheep was the native of poor pastures, hills, moors and downs.... The long-woolled sheep belongs to rich grasslands, marshes and fens. The great bulk of the fine wool exported in the Middle Ages came from two long-woolled breeds, Cotswolds and Lincolns and, some way behind, Leicesters, which were probably common to most of the Midlands.[2]

It will be shown later that the production of long-staple wool in England in the Middle Ages was, at the most, negligible, there being no true long-woolled breed of sheep in England at this time. Consequently, the overwhelming bulk of wool exports—and all fine wool exports—were of short-staple, and not long-staple, wool. Even if Professor Power's description of sheep breeds were applied to the conditions of the sixteenth and seventeenth centuries, when increasing quantities of long-staple wool were being produced, it would still require very considerable qualification.

In the first place, the classification of sheep into long-woolled or short-woolled breeds, though convenient, tends to obscure two important considerations. First, it implies a clear-cut division between long- and short-staple wool which previous to the eighteenth century did not in fact exist. Many Norfolk sheep, for example, produced a 'middle' wool which, while too short to fall into the category of long-wool proper, was long enough for use in the manufacture of worsted fabrics, though short enough to be used in the making of coarse cloth.[3] Secondly, fleeces were never of a uniform length of staple or fineness throughout. Long and short wool, coarse and fine wool might all grow in the same fleece, though in different proportions;[4] and a long-woolled fleece, for example, would be one in which long-staple wool predominated.

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[1] Based on a section of my Ph.D. thesis, *The Internal Wool Trade in England during the Sixteenth and Seventeenth Centuries* (Leeds University, December 1952).

[2] E. Power, *The Wool Trade in English Medieval History* (Oxford, 1941), pp. 21–2.

[3] The coarseness of the wool grown in Norfolk and its poor felting property made it unsuitable for the manufacture of fine broadcloth, and, until at least the beginning of the seventeenth century, it was worked up chiefly into worsted and, to a lesser extent, into coarse cloth. See Statute 33 Henry VIII, *c.* 16; P.R.O. E. 134/44–5 Eliz. Mich. 1; S.P. 14/80/13.

[4] P.R.O. S.P. 16/515/139; W. Youatt, *Sheep, Their Breeds, Management and Diseases* (ed. 1890), p. 66. There were other ways in addition to fineness of fibre and length of staple in which wools could vary from each other. They could, for instance, differ in 'trueness' of staple, in strength of fibre, in softness, in elasticity and in colour. A consideration of these matters, however, lies outside the scope of this paper.

Bearing these considerations in mind, the main differences between long-woolled and short-woolled fleeces in the sixteenth and seventeenth centuries may now be mentioned. The first and most obvious difference was in the length of the staple of the bulk of the fleece. The staple of long-wool proper was six inches or more in length: that of 'middle' and short wool proportionately less. A long-woolled fleece being longer, and often coarser, than a short-woolled fleece, was also heavier. Its weight might have been anything over 4 lb. The short-woolled fleece, on the other hand, might have weighed as little as 1 lb. In the sixteenth and seventeenth centuries, the fine wool of the Rylands breed did not normally weigh more than 1 lb. in the fleece,[1] and even in the nineteenth century rarely exceeded 2 lb.[2] The fleece of other short-woolled breeds was somewhat heavier. In the early Stuart period that of the Sussex and Hampshire sheep normally weighed 2 or 3 lb.[3] while the sheep owned by Henry Best, one of the minor gentry of the East Riding, produced a fleece of about the same weight.[4] Finally, one further main difference between long-woolled and short-woolled fleeces may be mentioned. The wool of the former was more diversified and thus required a much greater amount of sorting than was the case with the short-woolled fleece.

Various influences determined the fineness of wool and the length of staple. Of these, temperature, if not the most powerful, was certainly not without significance. According to Youatt, who wrote in the nineteenth century, 'the natural tendency to produce wool of a certain fibre being the same, sheep in a hot climate will yield a comparatively coarse wool, and those in a cold climate will carry a finer, but at the same time a closer and warmer fleece'.[5] When sheep were starved, however, extreme cold was injurious to the quality of the fleece, and it became coarse, or lost much in weight, strength and usefulness.[6]

Pasturage had a far greater influence than temperature upon the fineness of the fleece and the length of its staple. The more nutriment which a sheep received the larger it became. The staple of the wool was no exception and like every other part of the animal, increased in length and bulk as a result of better feeding.[7] The difficulties experienced by farmers in providing sufficient grazing and fodder for animals under the open-field system of agriculture are too well-known to need elaboration here. The common wastes, the corn-stubble left after harvest, the very limited supplies of hay and straw in the winter supplemented by the leaves of common forest trees made the scantiest feeding; and the pressure upon these resources as the autumn drew on made it possible for the farmer to maintain little more than the breeding stock and the young stock needed to replenish flocks and herds. The enclosures for sheep-farming made life easier, both for the farmer and his sheep. As Lord Ernle has already stated, 'as enclosures multiplied, sheep were better fed, and the fleece increased in weight and length though it lost something of the fineness of its quality'.[8] Thus throughout the sixteenth and seventeenth centuries there was a gradual diminution in the supply of fine, short wool grown in England and an increase in the supply of longer and coarser wool.

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[1] *V.C.H. Herefordshire*, I, 409.

[2] Youatt, *op. cit.* p. 258.

[3] *Commons Debates, 1621*, ed. W. Notestein, F. H. Relf, and H. Simpson (New Haven, 1935), VII, 499.

[4] *Rural Economy in Yorkshire in 1641, being the Farming and Account Books of Henry Best* (Durham, Surtees Soc. 1857), p. 24.

[5] Youatt, *op. cit.* p. 69.

[6] *Ibid.* p. 70; *An Enquiry into the Nature and Qualities of English Wools, By a Gentleman Farmer* (1788), p. 18.

[7] Youatt, *op. cit.* p. 70.

[8] R. E. Prothero (Lord Ernle), *English Farming Past and Present* (1912), p. 81. It is apparent, however, that Lord Ernle did not fully realize the significance of these changes in the wool supply, as he also held the common view that English wool exports during the fourteenth and fifteenth centuries were mainly of long-staple wool (*ibid.* pp. 78–80).

The influence exerted by enclosure upon the quality and length of wool, however, varied considerably in different parts of the country. It was most strongly felt when it took place upon land which was potentially deep and rich pasture. In England, such land was concentrated mainly in that V-shaped area running from Wiltshire in the south-west to Norfolk in the east and the East Riding in the north where the open fields persisted the longest and still remained the dominant system of agriculture at the end of the sixteenth century. Here the bulk of the country's fine wool supply in the Middle Ages was produced. But even so, this area had been the centre of the enclosure movement of the mid-fifteenth century onwards, and ever since that time it had gradually been increasing its production of longer and coarser wool. Outside this area enclosure had, for the most part, taken place much earlier. But here grasslands were less luxuriant and feeding poorer. Consequently, enclosure in these parts had not effected the same radical changes in the type of wool produced as it later did in the mainly Midland area already mentioned.

As we have seen, the influences of pasture and temperature largely determined the characteristics of the wool produced by breeds of sheep native to particular areas. Given time, the same influences could also effect changes in the type of wool produced by alien breeds. Coarse-woolled sheep from Wales and other 'outward' places had been used for stocking some of the lands which were enclosed in the Midlands during the late fifteenth and early sixteenth centuries. According to one commentator, the result of this had been that 'ther corse wolle chaungith to staple wolle, but not so pure fyne wolle like as in old tyme it was receyvid by werks of housboundry'.[1] Despite the influence exerted by pasture, however, the intermingling of sheep bred on enclosed and unenclosed lands, such as might occur, for example, when a farmer purchased new stock, must, over a period of years, have had some effect, if only slight, on the character of wool produced under the open-field system of agriculture.

II

The effect which enclosure was having on the quality and weight of wool was noticed by some contemporaries. Thus an early sixteenth century critic of the enclosure-movement stated:

> ...the shepe to receyve that gift of fynes and godnes therof must nedes fede of the leyres of the erthe like as in old tyme (when) the erth was wrought and openyd by tillage....So as than was it pure fyne woll, oon pownd worth two now, because the erthe is now putt to indulnes to bryng forth rant, foggye, wild greese, wherupon the shepe of the hyghest of the greese receyvith ther fedyng, so receyve they rank, wild heyry wolle, in that they cannot come to the leyr of therthe....So is the gift of fyne wolle yerly lost to the great hurt and sclander of the reame.[2]

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[1] *Tudor Economic Documents*, ed. R. H. Tawney and E. Power (1924), III, 101.

[2] *Ibid.* The deterioration in the quality of wool as a result of enclosure was quite widely admitted in the eighteenth century. See E. C. K. Gonner, *Common Land and Inclosure* (1912), pp. 340–342; *An Enquiry into the Nature and Qualities of English Wools*, pp. 17–22; Hist.MSS.Comm. *Buckinghamshire MSS.* p. 303.

Commented another writer in 1610:

> In those daies before the trobles wee had not so muche woolle growinge as wee haue nowe, for that men covet to haue sheepe which beare great burdens so that one sheepe beareth as muche woolle as twoe or three did in those times, being nowe all pasture sheepe, and heeretofore many were fielden sheepe. 13, 14, 15 and 16 used to bear a tod nowe 4 sheepe doe it.[1]

Surviving references by contemporaries to the changes effected by enclosure on the character of the sheep's fleece are, however, few—so few in fact that their significance has completely escaped the attention of economic historians. Indeed, there might seem good reason for viewing even these references with scepticism were it not for the fact that they are borne out by an overwhelming weight of supporting evidence.

Though the reason for the deterioration in the quality of the wool supply does not appear to have been generally understood by English textile manufacturers, it did not pass completely unnoticed by them. Thus, in 1586, West Country clothiers, who obtained the bulk of their wool supplies from the Midlands, complained, 'the grosenes of wolles in England' hath 'much encreased . . . within theis tenne yeres or theirabоutes',[2] and this refrain was later taken up by West Riding manufacturers with particular reference to Lincolnshire wool.[3] The main criterion of high-quality wool was fineness of fibre, and the finest wools commanded the highest prices.[4] Further evidence of the deterioration in the quality of the wools grown in the Midlands and Lincolnshire can therefore be obtained by comparing price-lists of English wools at different dates. A number of such lists covering the period between the mid-fourteenth and the end of the sixteenth century are available,[5] and these show a downward trend in the relative prices of wools grown in the Lincolnshire and Midland areas. As the wools produced in these parts became coarser, other wools which had not previously been highly regarded began to be held in greater esteem. Hampshire wool, for example, had never enjoyed any great reputation in the Middle Ages, but by the middle years of the seventeenth century it was considered to be one of the finest clothing wools in the country.[6] The wool produced on the Sussex downs, which had been not at all distinguished for its quality before the seventeenth century, was highly praised by one authority in 1706.[1] Even the contemptuous 'Cornish hair'[2] of bygone days was stated in 1582 to be 'verye good and much bettere and plenty fullere then in tymes past'.[3]

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[1] B.M. Lansd. MS. 152 (fol. 229). Considerably earlier than this, some contemporaries were aware that pasture sheep gave a greater amount of wool than those grazed on the commons and open-field stubble. See, for example, the statement: 'Allowed to every Todde xx sheere shepe, because it is thought that ther was not so many pasture sheep in the tyme of Edward III as be nowe, but most were kept on the Comens.' For the year of writing (1547) the number of sheep per tod was estimated at 15. (*Tudor Economic Documents*, III, 180.) See also *Commons Debates, 1621*, VII, 499, for comments on the increased production of heavy fleeces in Oxfordshire, Worcestershire and Buckinghamshire.

[2] B.M. Lansd. MS. 48/66 (fol. 157).

[3] In a law-suit of 1638, it was deposed: 'The kersies ordinarily made in the viccaridge of Halifax twenty and thirty yeares agoe were made of better wooll then the kersies there now ordinarily made are. And sayeth that the wooll now brought out of Lincolneshire is not so good as was brought theare into the said parish about thirty yeares since' (P.R.O. E. 134/14 Car. I. Mich 21).

[4] Professor Mantoux's statement that long-staple wool was of 'better quality and higher price' than short-staple wool (P. Mantoux, *The Industrial Revolution in the Eighteenth Century* (tr. M. Vernon, ed. 1947), p. 67) is, in the main, inaccurate.

[5] *Foedera*, ed. T. Rymer (1708), V, 369; *Rolls of Parliament*, 32 Henry VI (printed in J. E. T. Rogers, *A History of Agriculture and Prices in England* (Oxford, 1886), III, 704); *Calendar of Letters and Papers, Foreign and Domestic*, Henry VIII, IX, 409; Hist. MSS. Comm. *Salisbury MSS.* XIII, 54–5; P.R.O. S.P. 1/102, fols. 1–2; S.P. 12/154/30.

[6] P.R.O. E. 134/14 Car. I. Mich. 20; *England's Glory, by the Benefit of Wool Manufactured therein* (1669), p. 11.

English wool had been unsurpassed for fineness in the Middle Ages, but as its quality deteriorated so did Spanish wool gain in estimation. Already in the early sixteenth century it was noticed that English wool was losing its reputation for fineness to Spanish wool,[4] and by the end of the century the latter was almost certainly superior. The decline which occurred in the English wool export trade during this period was undoubtedly largely due to the pressure of home demand and the relatively high price of English wool in the foreign market, but a not unimportant factor in the decline of overseas demand for fine wool may well have been the deterioration in the quality of the English fine-wool supply.[5] Indeed, the continental cloth industry found so little need for English wool in 1610 that it could be said, 'the woolles of Spayne serve their owne contry all France and Italy and the Netherlandes, and our woolles not once asked after, except wee would suffer our sortes of woolles to passe, which maketh our bayes, sayes, and other stuffes of that nature'.[6] After the mid-seventeenth century not even English writers could deny that Spanish wool was the finest in the world.[7]

Further evidence of the changes which were taking place in the character of the English wool supply is provided by information relating to the weights of Midland and Lincolnshire fleeces and the different uses to which these were put in the sixteenth and seventeenth centuries. As already stated, a long-woolled fleece weighed at least 4 lb. Yet in the thirteenth century the average weight of a large sample of Lincolnshire and Northamptonshire fleeces was only 1 lb. 14½ oz.[8] Even in the sixteenth and seventeenth centuries, when enclosures were resulting in the production of increasing quantities of long-staple wool, many of the fleeces grown in the Midlands and Lincolnshire were too light to have been the produce of long-woolled sheep. In 1586, for example, the average weight of fleeces produced by the sheep of one Oxfordshire grower was 3½ lb.,[9] while some of the Lincolnshire fleeces brought to the Doncaster market in the 1630's averaged between 2½ lb. and 3½ lb. in weight.[1]

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[1] J. Haynes, *A View of the Present State of the Clothing Trade in England* (1706), p. 14

[2] E. Power, 'The Wool Trade in the Fifteenth Century', *Studies in English Trade in the Fifteenth Century*, ed. E. Power and M. M. Postan (1933), p. 49.

[3] *Tudor Economic Documents*, I, 194.

[4] *Ibid.* III, 102.

[5] Two ways of meeting the competition of Spanish wool were open to English wool exporters. There was the most obvious method, which seems to have been attempted particularly during the early decades of the sixteenth century, of specializing in the export of the very finest types of wool so that a proportionately smaller part of the value of the wool was paid in customs. This was cut-throat competition, and the Staplers waged a losing battle. They endeavoured to offset part of this loss by concentrating more on the export of longer and coarser wool for which, at least during the first sixty years of the sixteenth century, there was a limited, but expanding, demand by the continental manufacturers of the 'new draperies'. Here competition was less intense; for though Spanish wool might be used for the weft of these fabrics, it was too short and too fine for the warp. See P.R.O. S.P. 10/13/81; B.M. Lansd. MS. 113/21 (fol. 63); Hist. MSS. Comm. *Salisbury MSS.* XIV, 55; *Ordinance Books of the Merchants of the Staple*, ed. E. E. Rich (Cambridge, 1937), pp. 13–15; *Tudor Economic Documents*, III, 114.

[6] B.M. Lansd. MS. 152 (fol. 229).

[7] See, for example, *England's Glory...*, p. 11; E. Lipson, *The Economic History of England* (ed. 1947), III, 31.

[8] R. A. Pelham, 'Fourteenth-Century England', *An Historical Geography of England Before* A.D. *1800*, ed. H. C. Darby (Cambridge, 1948), p. 240 n. 3.

[9] P.R.O. Req. 2/171/24. 15 tods of wool were obtained from 123 fleeces.

Perhaps, however, the strongest proof that Midland and Lincolnshire wools had not always been long and that their characteristics were in process of change is to be found in the uses to which these wools were put by the textile industry. Enclosure made light fleeces heavier, fine wool coarser, and short wool longer. In other words, it made wool unsuitable for the manufacture of fine broadcloth and made it better adapted to the manufacture of worsted fabrics and, to a lesser extent, the coarser varieties of cloth.[2]

In the early decades of the sixteenth century a large, though diminishing, part of the wool produced in the Midlands was exported. This was mainly fine, short wool, destined for the continental cloth industry. The Midlands' output of longer and coarser wool—a comparatively small, but increasing, proportion of the total produced in the area—was also exported for use in the continental manufacture of the 'new draperies'.[3] The remaining wool grown in the Midlands at this time was worked up at home into high-quality cloth, mainly in the West of England.[4] By 1570 the wool-export trade had become of little significance, and most Midlands wool was now utilized by the West Country fine broadcloth industry.[5] As the Midlands wool changed in character, its distribution also changed and by the early years of the seventeenth century a considerable proportion of it was being supplied to the eastern worsted industry and the northern coarse-woollen manufacture.[6] The East Anglian industry, in particular, drew more and more heavily upon the inland counties for its supplies of raw material; and by the end of the seventeenth century the English fine-woollen industry was probably taking the smallest part of the Midlands wool, the coarse-woollen manufacture a larger part, and the worsted industry most of all.[1] Some qualification needs to be made, however, in the case of the Cotswold sheep.[2] The original Cotswold breed of sheep were heavier, their wool longer and straighter in the staple, and their fleece coarser than was the case with the Herefordshire sheep;[3] but for all that, they were a fine, short-woolled breed, and in Gloucestershire, at any rate, they largely remained so until the early years of the eighteenth century. Throughout the sixteenth and seventeenth centuries a large, though eventually diminishing, part of the wool which was produced upon the Cotswold Hills was being used in the manufacture of fine broadcloth.[4] The omission of Gloucestershire from the references which contemporaries made to the major long-wool producing counties could therefore have been hardly an accident. There can, however, be no doubt that the characteristics of the Cotswold sheep were very gradually changing. The deterioration in the quality of their wool, and the increase in its length of staple became general in the eighteenth century; and when Rudder wrote in 1779, it was used only in the manufacture of worsteds and coarse cloths.[5]

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[1] P.R.O. E. 134/18 Car. I. East. 9. Considerable quantities of short and 'middle' wool were still produced in Lincolnshire towards the end of the seventeenth century. In 1672, for example, a sale was made of 555 Lincolnshire fleeces and it took four, five, six and even seven fleeces to weigh a stone (*V.C.H. Lincolnshire*, II, 335).

[2] Broadly speaking, wool which was short to medium in length of staple was carded and made into cloth. The finest and shortest of this wool was best fitted for the manufacture of fine broadcloth, whilst the coarsest (and often the longest) of it was made into kersies, dozens, cottons etc. Short carded wool—particularly fell wool—was also used for the weft of the new draperies. Wool which was medium to long in staple was combed and made into Norfolk worsted, or used for the warp of the new draperies. This wool was generally coarse in texture—the fibre of wool becoming coarser as it increased in length of staple.

[3] See above, p. 48, n. 5.

[4] For sales of Midlands wool in the home market during the first half of the sixteenth century, see P.R.O. C. 1/273/35; C. 1/278/17; C. 1/284/36; C. 1/308/15; C. 1/339/10–11; C. 1/370/96; C. 1/424/45; C. 1/449/17; C. 1/580/32; C. 1/642/9; C. 1/642/40; C. 1/790/17; C. 1/1059/36; C. 1/1148/4; C. 1/1279/45–7; C. 1/1312/65–8; C. 1/1398/52; Req. 2/16/21; G. D. Ramsay, *The Wiltshire Woollen Industry in the Sixteenth and Seventeenth Centuries* (Oxford, 1943), p. 6. Where designations are given, these references show the buyers to have been either merchants or West of England clothiers.

[5] For sales of Midlands wool in the home market between 1550 and 1570, see P.R.O. C. 3/150/78; Req. 2/25/163; Req. 2/76/50; Req. 2/176/45; Req. 2/179/46. In 1570, the East Anglian worsted industry having outgrown supplies of suitable Norfolk wool, four aldermen of Norwich were licensed to purchase wool anywhere within the realm for re-sale in the city. (P.R.O. C. 66/1062, membs. 31–2, 23 October, 12 Eliz.). The aldermen purchased large quantities of wool in the inland counties, particularly Northamptonshire. See P.R.O. S.P. 12/114/40; Req. 2/169/12.

[6] P.R.O. S.P. 12/114/40; S.P. 14/80/13, 15, 16; S.P. 14/111/72; Req. 2/169/12; E. 134/44–5 Eliz. Mich. 1; B.M. Add. MS. 34,324, fols. 10–13; *Acts of the Privy Council* (1615–16), pp. 625–6; *Commons' Debates, 1621*, VII, 497. Probably the largest part of the Midlands wool at this time, however, was still being used in the manufacture of high-quality cloth. See P.R.O. Req. 2/30/56; Req. 2/45/100; Req. 2/171/24; Req. 2/202/2; Req. 2/203/2; Req. 2/206/29; S.P. 14/80/13; E. 133/6/833.

The distribution of Lincolnshire wool was similarly changing. Until the last quarter of the sixteenth century the bulk of the wool grown in Lincolnshire had been either exported or used by the Suffolk woollen industry,[6] whose products ranged from good quality broadcloth, on the one hand, to very inferior quality cloths, known as 'sett clothes', on the other.[7] Towards the end of Elizabeth's reign the West Riding coarse-woollen industry, which had obtained a part, though probably a small part, of its wool supply from Lincolnshire in earlier years,[8] began to draw more and more heavily upon the area for raw material.[9] The Lincolnshire wool was used mainly by the Yorkshire manufacturers in the production of their better quality kersies, but it was on the whole inferior to that supplied to the southern clothiers.[10] At the same time, increasing quantities of Lincolnshire wool were being carried to East Anglia, particularly to Norwich, for manufacture into worsted fabrics; and by the beginning of the eighteenth century probably the largest part of the wool grown in Lincolnshire was being used for this purpose.[1] Indeed, by the time that Arthur Young wrote, supplies of long-staple wool from Lincolnshire and the midland counties had so increased that Norfolk wool (from which worsted had originally been made)[2] was being manufactured very largely into the coarser varieties of cloth.[3]

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[1] See P.R.O. E. 134/14 Car. I. Mich. 20, 21; E. 134/17 Car. I. Mich. 8; E. 134/18 Car. I. East. 9, 19; *H. of C. Journals*, XIII, 720; *ibid.* XV, 477; *ibid.* XVI, 111; *England's Glory...*, pp. 11–12; T. Fuller, *The History of the Worthies of England* (ed. 1840), I, 193; D. Defoe, *Tour Through Great Britain* (ed. 1927), I, 282; *ibid.* II, 432, 488; D. Defoe, *The Complete English Tradesman* (ed. 1738), II, 279–80; *V.C.H. Northamptonshire*, II, 332; T. S. Willan, *The English Coasting Trade, 1600–1750* (Manchester, 1938), pp. 90–1, 168–75; Prothero, *op. cit* pp. 138–9.

[2] The characteristics of the early Cotswold sheep have been a subject of some controversy. According to Professor Eileen Power (*The Wool Trade in English Medieval History*, p. 22) the original breed possessed wool that was fine and long, while other writers have claimed that their wool was long and coarse (see, for example, Youatt, *op. cit.* pp. 339–40). Neither of these views is correct.

[3] Prothero, *op. cit.* p. 138.

[4] See, for example, P.R.O. E. 134/14 Car. I. Mich. 20; *Commons Debates, 1621*, VII, 496; *England's Glory...*, p. 11; Fuller, *op. cit.* I, 547.

[5] *V.C.H. Gloucestershire*, II, 163.

[6] See P.R.O. C. 1/1111/60; C. 1/1318/5; C. 1/1465/56–7; Req. 2/61/93.

[7] P.R.O. Req. 2/37/46; S.P. 12/106/48; *Calendar of Patent Rolls*, Edward VI, v, 9–10; *ibid.* 1553–4, p. 386; Hist. MSS. Comm. *Various MSS.* III, 96. The Suffolk cloth industry was, however, declining, and by 1693 it could be stated that the manufacture of cloth had almost disappeared from the county. (Hist. MSS. Comm. *Portland MSS.* III, 548).

[8] P.R.O. C. 1/912/29.

[9] P.R.O. Req. 2/118/37; S.P. 14/80/13; E. 134/14 Car. I. Mich. 20–21; E. 134/17 Car. I. Mich. 8; Hist. MSS. Comm. *14th Report*, part IV, p. 573.

[10] P.R.O. S.P. 14/111/72; E. 134/14 Car. I. Mich. 21.

Further proof of the changes which were taking place in the character of the English wool supply is to be found in the growing emphasis that came to be placed on the wool sorting operations of wool dealers and manufacturers. It is generally assumed that wool sorting has always been an essential process in the wool textile industry; but this is not the case. All the available evidence suggests that until about 1570 the only kind of wool-sorting which was performed by wool middlemen and cloth manufacturers was sorting by the quality of the fleece as a whole, and not by the staple within the fleece.[4] Stated a number of West Country clothiers in 1586:

> ...in tymes paste generallie all the wolles as we boughte of the grower we coulde cloathe it all either in to fyne or course sortinge cloathes and woulde serve the market verie well. But nowe...we are to make fyne sortinge cloathe and yet our wolles are courser.
>
> Therefore we muste cull and take out the fynest of all our wolles to make our fyne cloathes. And the rest which is of the woolles which we buye, the one halfe we cannot cloathe for the coursenes therof.[5]

As English wool became more diverse, and the varieties of English textiles more numerous, the sorting functions performed by wool dealers increased in importance and complexity. By 1616 the Staplers could claim that they sorted 'the fleece or woll of our sheepe, sometimes (into) 5 sortes'.[6] By 1647 this had become: 'the long Wool into 3 or 4 sorts, and the short Wooll into 4 or 5 sorts.'[7] Fell wool was likewise divided into several classes.[8] The sorting of wool continued to become a more and more complex operation; and in 1716 one London stapler was dealing in 'packs and parcells of lusty, saycast, short coarse, superfine, fine wooll, third fine neat, second, livery, long course, Black wooll, Clipt and to clip, and pitch Brans'[9]—grades of wool with which the modern woolman is mostly familiar.

III

The changes which were taking place in the character of the English wool supply had a profound influence on the development of the English wool-textile industry. As Professor Fisher has already shown,[10] the opening years of

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[1] P.R.O. S.P. 14/80/13; *H. of C. Journals*, XIII, 720; Willan, *op. cit.* pp. 88, 123–4.

[2] See above p. 44, n. 3.

[3] Thus, Young was able to state that the short-staple wool grown in Norfolk was consumed in Yorkshire, and the long-staple wool grown in Lincolnshire and Leicestershire was worked up in Norwich (*Tour through the East* (ed. 1771), II, 74). When Young wrote, Norfolk wool must have seemed short by comparison with the longer Lincoln and Leicester wools; but even so, much of it was still probably long enough for manufacture into worsted.

[4] The Staplers' wool exports had always been sorted, but (the refuse wool and locks having been removed) only according to the quality of the fleece as a whole. It was not, in fact, until after they engaged in the internal wool trade that the Staplers became wool sorters proper; and even in the mid-seventeenth century it could still be stated that some of the merchants sold wool in the fleece. See *Cal. S.P. Domestic* (1650), p. 407.

[5] B.M. Lansd. MS. 48/66 (fols. 157–8). See also *ibid.* 152 (fol. 225); P.R.O. S.P. 12/114/33; S.P. 14/80/13, 15, 16; *Acts of the Privy Council* (1616–17), pp. 28–9.

[6] B.M. Lansd. MS. 152 (fol. 227).

[7] P.R.O. S.P. 16/515/139.

[8] See R. Plot, *The Natural History of Oxfordshire* (Oxford, 1677), p. 279.

[9] P.R.O. E. 134/5 Geo. I. Trin. 5. The usual price for sorting wool is given as 3*s*. 6*d*. per pack.

[10] F. J. Fisher, 'Commercial Trends and Policy in Sixteenth Century England', *Econ. Hist. Rev.* X (1940), 95–117.

Elizabeth's reign marked a watershed in the development of the industry. Cloth exports, which had practically trebled in volume during the first half of the sixteenth century, fell during the third quarter, and became stabilized in the last quarter of the century at a level considerably lower than that which had obtained at the height of the 1550–1 boom. During the seventeenth century, once the post-war boom which followed the ending of hostilities with Spain in 1604 was over,[1] the volume of cloth exports shrank still further and the broadcloth industry thereafter languished in an almost continual state of stagnation and acute depression.[2] Although subject to periods of bad trade the coarse-woollen industry fared somewhat better, and the output of the industry at the end of the seventeenth century may have been considerably higher than it had been 150 years earlier.[3]

By comparison with the woollen industry, indeed by any comparison, the worsted industry enjoyed remarkable prosperity.[4] Possibly the new draperies, which were varieties of worsted, had been made in England during the first half of the sixteenth century; but if so, their production had been quantitatively insignificant. During the opening years of Elizabeth's reign, however, the manufacture of bayes, sayes and other worsted fabrics previously manufactured on the Continent became established in England on a considerable scale. The manufacture of these new products substantially increased during the latter half of the sixteenth century,[5] and rapidly expanded after the end of the war with Spain. So rapid was the expansion that, even before the commencement of the

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[1] The decade which followed the Anglo-Spanish peace has long been recognized as a period of general commercial prosperity. It seems doubtful, however, whether the cloth industry experienced a high level of activity throughout the period. Except for the year 1606 no statistics of cloth exports are available after 1604 until 1614. The exports for 1606 and 1614 were high, but were probably considerably above the average for the period. In 1606 the post-war boom had not yet finished, and it was later said (*Acts of the Privy Council* (1615–16), p. 30) that cloth exports in 1614 were above normal because the Merchant Adventurers in their antagonism to Alderman Cockayne's project wished to glut the foreign market. Further evidence in support of the view that the decade 1604–14 was not an entirely prosperous one for the English cloth industry is to be found in the complaints of merchants and manufacturers as to the lack of cloth sales (see B.M. Lansd. MS. 152 (fol 229); Hist. MSS. Comm. *Downshire MSS.* II, 336–7; John May, *A Declaration of the Estate of Clothing now used within this Realme of England* (1613), p. 35; W. R. Scott, *Joint Stock Companies to 1720* (Cambridge, 1910), I, 142 n. 5) and the fall in the price of wool between 1605 and 1610 (see P. J. Bowden, 'Movements in Wool Prices, 1490–1610', *Yorkshire Bulletin of Economic and Social Research*, IV (1952), 116).

[2] See, for example, F. J. Fisher, 'London's Export Trade in the Early Seventeenth Century', *Econ. Hist. Rev.* 2nd ser. III (1950), 151–61; A. Friis, *Alderman Cockayne's Project and the Cloth Trade* (Copenhagen and London, 1927), *passim*; Scott, *op. cit.* I, 186, 231, 241, 260–1, 299, 307, 309, 466; *Cal. S.P. Domestic* (1629–31), p. 147; *ibid.* 1638–9, p. 241; *ibid.* 1651–2, p. 481; *ibid.* 1665–6, p. 352; *ibid.* 1670, p. 102; *ibid.* 1677–8, p. 69; *H. of C. Journals*, XIII, 52, 95; *H. of L. Journals*, IX, 543; Hist. MSS. Comm. *Portland MSS.* III, 548; *ibid.* VIII, 2; Hist. MSS. Comm. *Exeter MSS.* p. 80; Hist. MSS. Comm. *Various MSS.* I, 115; Index to Privy Council Registers, 1633–7, XIII, fols. 10, 30; *ibid.* 1637–45, XVI, fol. 266; *ibid.* 1637–45, XVIII, fol. 225; P.R.O. S.P. 18/1/34.

[3] Cf. H. Heaton, *Yorkshire Woollen and Worsted Industries* (Oxford, 1920), p. 79; *V.C.H. Yorkshire*, II, 416.

[4] Worsted was made in England as early as the fourteenth century, the manufacture being localized in and around Norfolk. Export statistics and complaints concerning unemployment (see L. Stone, 'State Control in Sixteenth Century England', *Econ. Hist. Rev.* XVII (1947), 119; Statute 1 Edward VI, c. 6) suggest that the second quarter of the sixteenth century witnessed a very considerable decline in this trade. The decline was probably mainly attributable to the increase in competition in the foreign market from the continental new draperies; to some extent it may also have been due to capital being transferred from the worsted manufacture to the booming cloth industry.

[5] See N. J. Williams, 'Two Documents concerning the New Draperies', *Econ. Hist. Rev.* 2nd ser. IV (1952), 353–8.

Civil War, the trade in these new fabrics almost equalled in value the trade in the old.[1]

The striking difference between the trade in the old draperies and that in the new is capable of explanation.[2] It resulted from the combination of a number of factors, of which the most important was the changing character of the English wool supply. This gave a plain indication to home manufacturers of the lines along which the English wool textile industry should develop, and by helping to shape the foreign demand for English cloth made the potential development certain.

Superficially, the main differences between the old woollen and the new worsted fabrics were these: the former were made wholly of short carded wool, were warm and heavy, and monotonous in design; the latter were made wholly or, more often, partly of combed, long-staple wool, were light in weight, and possessed a wide range of patterns. The former were best fitted for wear in northern, central and eastern Europe, whilst the latter were admirably suited for the warm, but non-tropical Mediterranean. It was England's fortune that she possessed a quasi-monopoly of long-staple wool;[3] and it was this, together with the improvement in Anglo-Spanish political relations, which enabled the English worsted manufacturers to make the Spanish, Portuguese and Mediterranean markets their own special province during the seventeenth century.[4] Elsewhere, the variety and comparative cheapness of the new draperies made a limited appeal to the foreign consumer; and a minor, but not unimportant, proportion of them were sold in northern Europe, where they became increasingly popular as the seventeenth century progressed.[5]

At least a part, and quite probably a large part, of the increase in the sales of the new draperies was made possible only at the expense of English and continental woollens. But if continental manufacturers were unable to secure all their markets against the competition of English worsted, their products were more than able to hold their own against the traditional types of English woollens. For this, the Tudor and Stuart enclosures for sheep-farming may be held largely responsible.

The English fine-broadcloth manufacturers relied entirely upon supplies of home-produced wool for their raw material. As a result of the enclosures, however, the production of fine, short wool in England was declining, whilst by the early decades of the seventeenth century English wool, though unrivalled in length, had become inferior in quality to that of Spain. Faced with a diminishing supply of fine, short wool, the English broadcloth manufacturers were forced to use ill-assorted and inferior quality wool[1] to the detriment of their product, and it became increasingly difficult for them to compete in the market for high-quality woollens against their continental rivals who obtained the greater part of their raw material from Spain. The consequences, which had already been foreshadowed during the last quarter of the sixteenth century,[2] became fully apparent in the seventeenth when the foreign market for cloth once more became fiercely competitive.

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[1] *Econ. Hist. Rev.* 2nd ser. III (1950), 154.

[2] Professor Fisher, in seeking to find the reason for this difference, suggests that it may have been partly due to a relationship with the prevailing forms of commercial organization; and he very tentatively advances the thesis that 'the trade in shortcloths was sluggish because it was regulated and the trade in the new draperies expanded because it was comparatively free' (*ibid.* p. 158). It is not surprising that Professor Fisher should half-abandon this explanation; for, as he himself suggests, the facts do not support so simple an interpretation.

[3] From about the middle of the seventeenth century increasing quantities of long-staple wool were grown in Ireland. The production of this wool probably owed something to the importation of sheep from England (see B.M. Add. MS. 34,324, fols. 23–24; P.R.O. E. 134/14 Car. I. Mich. 20; *The Proverb Crossed* (B.M. Pamphlets, 712, g. 16/14), p. 23). By the end of the seventeenth century a limited amount of combing wool may also have been grown in North Holland and Zealand and in the vicinity of Ghent and Louvain in Flanders. See J. Smith, *Chronicon Rusticum-Commerciale, or Memoirs of Wool* (1747), II, 93.

[4] The great and growing importance of the Spanish and Mediterranean trade is illustrated by figures of the value of English wool-textile exports to the major European markets in 1662–3 and 1668–9, given in M. Priestley, 'Anglo-French Trade and the Unfavourable Balance Controversy, 1660–1685', *Econ. Hist. Rev.* 2nd ser. IV (1951), 47.

[5] *Econ. Hist. Rev.* 2nd ser. III (1950), 159; *ibid.* IV (1951), 47.

Because of the different market which it served, the coarse-woollen industry was better able to survive the deterioration in the quality of its wool supply. Even so, the consequences of using inferior[3] and ill-assorted wool were decidedly painful at a time when industrialization of consumer countries upon the Continent was resulting in a demand for cheap, but better-quality products.[4]

Contemporaries most frequently attributed the loss of foreign markets to the 'falsifications and deceits' used by manufacturers in the production of their cloth. Accusations of the debasement of materials and workmanship were not new, but during the seventeenth century they assumed unprecedented proportions. So great was the outcry, that Professor Fisher[5] has been led to accept it as convincing evidence of a deliberate lowering of manufacturing standards throughout the woollen industry by manufacturers struggling to keep down their costs of production. At first sight this is a very plausible view; but unfortunately, it does not accord with the facts. Indeed, the main premise used in support of this argument can itself be used against it.

It is argued that the outstanding feature of the English wool textile industry during the seventeenth century was that it operated under conditions of virtually fixed real costs. Granted that this was so, it does not necessarily follow that manufacturers[6] were thereby induced to adulterate their cloth in order to keep their money costs low. For it must not be forgotten that the continental wool-textile industry also operated under similar conditions. Consequently, neither the English nor the foreign manufacturer normally had—nor in the absence of real-cost-reducing inventions, could have—any marked advantage over the other in the matter of production costs and selling prices; and under these circumstances quality became the all-important key to success in the competitive overseas market. The very volume of the outcry against the debasement of English cloth makes this perfectly clear. English manufacturers had therefore much to gain by raising the standard of their product, and, apart from some small economy in costs, much to lose by debasing it. This is not to say that English cloth manufacturers were not cost-conscious: they were. But no less, they were quality-conscious. They knew, even better than their critics, that dishonest cost-reductions marked a sure stage along the road to ruin; and rather than countenance them, many strove hard to improve their workmanship. Some, notably in the coarse-woollen industry, succeeded in doing so, despite the deterioration in their wool supply.[1] But many failed to overcome this disadvantage. That they failed to do so, does not automatically justify the contemporary attitude that they were rogues and tricksters.[2]

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[1] By the beginning of the seventeenth century most of the finest wool grown in Dorset was being spun into yarn within the county for sale to the clothiers of Wiltshire and Somerset (P.R.O. E. 134/6 Jas. I. East. 30). In the fifteenth and early sixteenth centuries even the best Dorsetshire wool would have been considered too coarse for use by the West of England broadcloth industry. Similarly, the wool of South Wales was of a generally inferior quality; but in the second half of the sixteenth century there was an increase in its export to Bristol and to northern ports in Somerset and Devon. See P.R.O. C. 3/200/90; A. L. Rowse, *The England of Elizabeth* (1951), p. 77; E. A. Lewis, *Welsh Port Books, 1550–1603* (Cymmrod. Rec. Ser. XII, 1927), pp. xxxii-xxxiv, 86–91, 156–9.

[2] B.M. Lansd. MS. 48/66 (fols. 157–8); *Tudor Economic Documents*, III, 214.

[3] Not only was the wool of Lincolnshire, Leicestershire and other midland counties becoming coarser, but as increasing quantities of it went to the worsted industry in East Anglia and other parts of England, so the raw material difficulties of the West Riding woollen manufacturers increased. As their supplies of better-quality raw material began to dry up, the Yorkshire clothiers were compelled to draw more and more heavily upon the cheaper and inferior grades of wool from the northern counties, Ireland, Scotland and other parts. According to one witness in a lawsuit of 1638, these wools were 'farr worse wolles then the woolles brought out of Lincolneshire and those partes about thirty yeares ago were' (P.R.O. E. 134/14 Car. I. Mich. 21).

[4] Industrialization in Germany in the first few decades of the seventeenth century gave a severe jolt to the West Riding industry, and the inferior broadlist kersies, which had previously been exported in great numbers to the German market, went out of demand. See P.R.O. E. 134/14 Car. I. Mich. 20, 21.

[5] *Econ. Hist. Rev.* 2nd ser. III (1950), 156.

[6] I.e. self-employed manufacturers. Under the 'putting-out system', spinners and weavers may have been, and sometimes were, dishonest; but as their employers did not connive in their dishonesty, this does not enter into the argument.

IV

The long-period difficulties[3] of the English woollen industry during the seventeenth century were due to three principal causes: to the competition of foreign and home produced textiles; to the industrialization of foreign consumer-countries; and to the changing character of English wool. These difficulties the cloth industry endeavoured to surmount in three different ways: by finding new markets; by making new products; and—through the government prohibiting the exportation of English raw materials—by attempting to impede the production of textiles abroad.

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[1] This is shown by the depositions of witnesses in a law-suit of 1638. Deposed William Busfield, a Leeds merchant: 'About 24 or 30 years since the kersies ordinarily made in the parishes (of Halifax, Bradford and Keighley) were wors made then the kersies that are now there ordinarily made and of lesse substance and lesse value and price and was so base made that they grew out of vse and was not vendible as formerly' (P.R.O. E. 134/14 Car. I. Mich. 20). Whilst John Hopkinson of Townlee stated: 'The kersies ordinarily made in the viccaridge of Halifax twenty and thirty yeares agoe were made of better wooll then the kersies there now ordinarily made are. And sayeth that the wooll now brought out of Lincolneshire is not so good as was brought theare into the said parish about thirty yeares since. And that the kersies now made in the said parish are of better workmanshipp then the said kersies made twenty yeares ago were' (P.R.O. E. 134/14 Car. I. Mich. 21).

[2] This opinion was most strongly held by the merchanting classes. The manufacturers, of course, held different views. During the late sixteenth and early seventeenth centuries the wealthier clothiers clearly associated their difficulties with the raw material which they used. But rather than recognize that it was the inherent properties of English wool which were to blame, some of them preferred to make scapegoats of the wool and yarn-middlemen. Thus, in 1614 a representative of the wealthier manufacturing class stated: 'What doe theise Jobbers? they buy all the smale parcells of yarne they can gett, being of seuerall spyninges and sortes of wooll some courser some fyner some fleece wooll some pelt wooll and make them all vpp into a great bundle of such biggnes as those of the best yarne comonly vse to be: this yarne thus mingled and made of seuerall sortes of woll, is so contrary in working that the Cloth that is made of it comming out of the loome, all of one breadth, being putt into the fulling Mill, will shrinke almost a quarter of a yard narrower in some places then in other, which wee are compelled to stretch vpon the tenters to bring to equall breadth with thother; but when it shall come to wearing and be wett againe it will shrinke and cerle, which is the reason why the English cloth of late is so much discredyted, and sayd to be falsifyed and vntruely made: insomuch that in some places beyond the Seas English Clothes for the falsytyes that were found in them have bine burned in open markett: neyther can the Clothyer for his life better the making of his Cloth vnlesse the deceytes and abuses of theise Jobbers of wooll and yarne be preuented' (B.M. Lansd. MS. 152 (fol. 224)). See also *ibid.* 48/66 (fols. 157–8).

[3] These were frequently aggravated by short-to-medium period difficulties, usually of political causation, such as the Thirty Years' War and the English Civil War.

The chances of tapping a new demand for English cloth seemed to be most promising in those areas made accessible by the great geographical discoveries. But neither the New World nor the Far East contributed any immediate solution to the problem of English woollen exporters. In the latter the climate was too hot for the wearing of heavy woollens, whilst in the former there were as yet few communities sufficiently commercialized to purchase them. Gradually the North American market was opened-up; but until at least the middle of the seventeenth century, it was in the Old World rather than in the New that the new markets for English woollens were found.[1]

In adjusting itself to the changing character of home-produced wool, the English woollen industry had two main courses open to it. Either it could adapt itself to the raw material by gradually transferring its capital and labour to the production of worsted fabrics;[2] or else it could devise new and better-quality woollens with the aid of wool imported from abroad. The former solution recommended itself principally to the coarse-woollen industry;[3] the latter to the manufacturers of high-quality cloth. Of the growing importance of the worsted manufacture sufficient has already been said; and it now remains to comment upon the new industry which arose in the West of England—the manufacture of Spanish, or medley, cloth: a fabric woven wholly or in part from fine Spanish wool.[4]

Though Spanish wool had been exported to England at least as early as the twelfth century,[5] it was not until the reign of Henry VIII, when the new manufacture of felt hats was firmly settled in England,[6] that the trade became established on a regular basis.[7] The new manufacture soon proved a formidable rival to the old capping industry, and imports of wool from Spain accordingly increased.[8] By the 1570's the trade had become large enough to attract the attention of would-be-patentees; and in 1577 and 1594, grants for the 'only bringing in of Spanish woolles' were in turn made to Dr Hector Nunez and Sir Michael Stanhope.[1]

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[1] *Econ. Hist. Rev.* 2nd ser. III (1950), 157.

[2] The growth of the worsted industry was not, of course, solely due to the transference of resources from within the wool-textile industry. A large part of it must have been made possible by new investment from without.

[3] Not entirely, however. New draperies were being made in Gloucestershire before the end of the seventeenth century, and there were serge makers in Wiltshire before the Civil War (G. D. Ramsay, *op. cit.* pp. 110–11).

[4] John Haynes the pamphleteer, writing in 1706, stated: 'Indeed I do not deny that cloth has been, and is still made of all Spanish Wool; and that proof has been made of fine cloth made of a Chain of Silk with a Woofte of Spanish Wool. But for the most part our fine Spanish Cloth is made of a Worp of English Wool and a Woofte of Spanish (Haynes, *op. cit.* pp. 14–15).

[5] J. Klein, *The Mesta, A Study in Spanish Economic History, 1273–1836* (Cambridge, Mass., 1920), p. 34.

[6] G. Unwin, *Industrial Organisation in the Sixteenth and Seventeenth Centuries* (Oxford, 1904), p. 131.

[7] Though the finest felts were made of Spanish wool, the coarsest, which were 'covered with velleytt taffittaes and such like' were often made of 'Estridge' or French wool (B.M. Lansd. MS. 29/24 (fol. 56)). English, Welsh and Irish wools were also sometimes used, much to the dismay of the Spanish Eastland merchants and the Company of Haberdashers. See P.R.O. S.P. 14/94/116; *Acts of the Privy Council* (January 1618–June 1619), pp. 149–50; *ibid.* (July 1619–June 1621), pp. 18–19.

[8] For figures of Spanish-wool imports between Michaelmas 1578 and Easter 1585 see B.M. Lansd. MS. 29/24 (fol. 56); *ibid.* 48/64 (fol. 152). At first, Spanish and other foreign wools were imported into England only by aliens; but by 1579 wool imports were being made mostly by 'English merchauntes Aldermen and of the best Comoners of London and other Cittis and townes in the West partes' (*ibid.* 28/31 (fol. 71)).

Possibly the English wool growers took alarm at the growth in the importation of Spanish wool, for in 1604 an abortive Bill to prohibit the import of all foreign wools was introduced into the Commons.[2] Though the wool growers may have foreseen that Spanish wool would eventually replace English wool in the home manufacture of fine cloth, there appears to be no reason for believing that this development was already in progress by 1604. Surviving references[3] to the sale of Spanish wool in England during the late sixteenth century, show that the buyers were either feltmakers or haberdashers, but never clothiers; and it is noticeable that when the new importation of dyed Spanish wool was disputed by the London merchants in 1607, it was the feltmakers, and not the cloth manufacturers, who were brought forward to testify to the excellence of the raw material.[4] What little evidence there is, in fact, points to the conclusion that it was not until the depressed years of the 1620's that some English woollen manufacturers were led to experiment with Spanish wool in the production of their cloth.

Originally made, at least in part, from dyed wool imported from Spain, and later from Spanish wool dyed in England,[5] Spanish cloth proved an immediate success, and by 1630 it had become one of the most sought-after English cloths abroad.[6] Although other factors may have contributed to its success,[7] the popularity of the new fabric may be attributed largely to the superior texture which it obtained through the use of fine Spanish wool. By the 1630's the new industry had become firmly established,[8] and it continued to expand throughout the seventeenth century.[9] The main seat of the manufacture lay along the borders of Somerset and Wiltshire from Frome to Bradford:[10] an area formerly given over to the making of fine white broadcloth. The new industry never spread throughout all the West of England broadcloth region; had it done so, and rapidly, much of the distress in the older industry would have doubtless been avoided. But as it was, many clothiers were too conservative to change their methods,[11] and as the demand was for medley and other new fabrics their manufacture inevitably declined.[12]

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[1] P.R.O. Signet Office Docquets, IND. 6800, 17 September 1594; S.P. 38/4/17 September 1594. Both patents were granted for a term of twenty years; and a customs duty of 4*s.* 2*d.* per cwt. was levied on imports. See also B.M. Lansd. MS. 28/31 (fol. 71); *ibid.* 29/26 (fols. 59–60); Hist MSS. Comm. *Salisbury MSS.* XVIII, 160, 161, 386.

[2] *H. of C. Journals*, I, 181, 206.

[3] See P.R.O. E. 101/457/36; C. 3/199/28; Req. 2/41/61; Req. 2/54/39; Req. 2/142/22.

[4] P.R.O. S.P. 15/39/34.

[5] Ramsay, *op. cit.* p. 103.

[6] *Ibid.* p. 106.

[7] The export duty on cloth was levied irrespective of value, and this must have favoured the new manufacture; for as Spanish cloths were finer and more costly than broadcloth, the merchants stood to gain by exporting the former rather than the latter (*ibid.*).

[8] *Ibid.* p. 103.

[9] *Ibid.* pp. 112, 114–16; *Econ. Hist. Rev.* 2nd ser. IV (1951), 46–7.

[10] Ramsay, *op. cit.* p. 103. According to Defoe, at the beginning of the eighteenth century fine medley cloths were also made in Dorset, Gloucestershire, Worcestershire, Kent, Surrey and Devonshire. (*Tour Through Great Britain*, I, 280–1; *The Complete English Tradesman*, II, 282.)

[11] Some white broadcloth manufacturers, however, ventured to dye their cloths in the say—i.e. after they had left the loom but before they had been fulled. This experiment met with a certain degree of success, partly, perhaps, because say-dyed cloth could be made into a good imitation of Spanish cloth (Ramsay, *op. cit.* pp. 104–5).

[12] *Ibid.* pp. 116–17.

The changes in the English wool supply which have been described were part of a long-drawn-out process. Enclosure, though not always for sheep-farming, continued to be a feature of rural life in the Midlands until comparatively modern times, while in the eighteenth century the better feeding provided by root crops, together with the improvement and popularization of the long-woolled Leicester breed of sheep by Bakewell and others, gave added impetus towards the increased production of long-staple wool.

As we have seen, the changes in the character of the English wool supply had important consequences in a number of directions. First, it made the wool-middleman's trade more necessary and, at the same time, more specialized. Secondly, it led to changes in the distribution of English wool and to an increase in the import of wool from Spain. Finally, and most important, it exerted a profound influence on the development of the English wool textile industry: an influence which was to continue long after the end of the seventeenth century.

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MERCHANT SHIPPING IN THE ECONOMY OF THE LATE SEVENTEENTH CENTURY

By RALPH DAVIS

THOUGH ships sail in the service of trade, trade statistics are poor indicators of the calls made by trade upon shipping. During the seventeenth century English foreign trade was not only growing rapidly but also changing its character, dealing increasingly with remote markets and sources of supply, and handling ever greater quantities of such cheap commodities as timber and coal. In these circumstances the shipping industry had to grow much faster than did the value of trade; and by 1700 it was making very heavy calls on the nation's resources of capital and manpower. It is proposed here to explore the complex nature of the demands of trade for shipping services in the last decades of the seventeenth century, and to examine the influences in the English economy of the expansion of the shipping industry which these demands called forth.

I

Two of the determinants of the cost of sea transport are obvious—volume[1] and distance. The first important consideration in charging freight for a thousand pounds' worth of goods, is not the fact that the goods are worth a thousand pounds, but that they will occupy space in the ship's hold or upon her decks, conventionally expressed in terms of a weight. This may be anything from a few pounds avoirdupois, if it is gold that is being carried, or fifty tons if it is wine, to a thousand or more tons if the cargo is coal.[2] From this point of view, the transatlantic trades in relatively cheap sugar and tobacco were far more important than the immensely more valuable trade in manufactured goods from Holland and Flanders. As Thomas Tryon wrote in 1669: 'It is the great quantities of Bulksom Commodities that multiplies Ships and Men...viz. Sugar, Tobacco, Cotton, Ginger, Wine and the like.'[3]

The main importance of value is negative: there is a limit to the distance over which it is worth transporting goods of low value in relation to their bulk. Positive relations between freight charges and the value of goods were rare in the seventeenth century. In the transport of bullion the usual rate from Cadiz to England was 1 per cent of its value;[4] a rate quite disproportionate to the space occupied, and obviously charged on the principle of 'what the traffic will bear'. The carriage of such exceptionally valuable cargo would, of course, slightly enhance the risk of loss of the ship through piracy.[5]

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[1] The significant 'volume' may be cubic volume or weight, according to the commodity concerned. The distinction is not important to the present argument.

[2] Timber was the extreme example of great bulk with small value, its freight to England commonly equalling its first cost; see B.M. Add. MSS. 25115–43, and A. F. W. Papillon, *Memoirs of Thomas Papillon* (1887), p. 68.

[3] *England's Grandeur* (1669), p. 22

[4] The master of the *Cadiz Merchant* deposed in 1673 that 'The usuall Custom for transportation of silver and plate to England is and hath been One per Cent since the King's frigates used to bring Plate from Cadiz and thereabouts to England'. (P.R.O. H.C.A. 13–77). See also *The British Merchant* (1721), III, 110.

[5] Warships were greatly in demand for the carriage of bullion, since they offered maximum safety.

The second obvious determinant of sea transport costs is distance. In sailing-ship days, this was much less a matter of mileage, of the direct distance between ports, than of the normal days' passage as determined by the winds and currents on possible routes.[1] A ship going to and fro between London and Dunkirk, or between Bristol and Cork, was likely to make eight or ten passages each way each year; a voyage to the West Indies and back would normally take eight or nine months, and be regarded as a ship's full employment for a year. The carriage of a hundred tons of goods a year from the West Indies made as great a demand on shipping services as the carriage of many hundreds of tons a year from nearby continental ports.

Other factors, considered below, had their influence on voyage times; but this simple matter of distance alone is frequently overlooked in considering the relationship between the growth of trade and of shipping.

Volume and distance clearly played a very great part in determining the costs of shipping services, the freights charged and so the size of the shipping industry. But there were other factors of much practical importance in the seventeenth century, all of them connected with the under-utilization of ships' capacity owing to the irregular nature of demand, to incomplete loading of ships, and to port delays. They were responsible for the difference between—on the one hand—an ideally employed merchant fleet which was normally either at sea fully loaded, or under repair in port, or actively engaged in loading or discharging; and—on the other—the actual merchant fleet of the period, of which at any given moment a large part was in passage empty or half empty, or lying completely idle while owners or masters negotiated for its lading.

II

The first of the 'utilization' factors is the one-way character of most trade between England and foreign countries. England's principal export was cloth—of very high value in relation to its bulk; its tonnage can hardly have approached 10,000 in any year. It was supplemented by hides, butter and cheese; and more important, by lead and tin, whose tonnage was little less than that of the far more valuable cloth export. Such cargoes could not fully lade all the ships sailing from English ports, even when they were supplemented by the re-export of foreign products such as sugar, tobacco and calicoes. The one bulk export, coal, went to a very limited range of markets; from Whitehaven to Ireland, from Newcastle and Sunderland to Holland and Hamburg. It may have served approximately to balance the volume of Irish trade. It greatly overbalanced the Dutch trade, for return cargoes from Holland consisted of a wealth of manufactures concentrated into small tonnage, together with two or three thousand tons of Rhenish wine and a few hundred tons of iron and copper.[2]

But, apart from coal, the great bulk cargoes were inward ones, and many of them came from the most distant places. Timber, hemp and iron from the Baltic; sugar, tobacco and dyestuffs (indigo and logwood) from the Caribbean and North America; wine from France, Spain and the Atlantic Islands; oil and fruit from the Mediterranean, pepper and saltpetre from India—these were the commodities which filled ships' holds. The employment of English shipping was determined, above all, by the demand for the transport of these goods to England. The approximate tonnage of imports of some of the leading commodities in 1699 was:[1]

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[1] The maps in the end-papers of C. N. Parkinson (ed.), *The Trade Winds* (1948), give a very clear picture of the way long distance sea trade routes were determined by the course of prevailing winds and currents.

[2] There was, however, a considerable triangular traffic; the Port Books show that many of the ships which sailed from Newcastle to Amsterdam with coal returned to Newcastle from Norway with timber. It is not known whether they secured cargoes from Holland to Norway.

	(1,000 tons)
Wine (mainly Spain and Portugal)	24
Sugar (West Indies)	23
Iron (mainly Sweden)	18
Tobacco (North America)	15
Hemp and Flax (Baltic, Russia)	10
Pepper (India)	9
Raisins (Spain)	8

Besides these there were timber imports, difficult to relate to tonnage, but almost certainly demanding a greater amount of shipping space than any other single commodity.[2]

To all places except the manufacturing countries of North-west Europe—to all her main suppliers of bulk imports—England sent out few exports beyond her manufactures, high in value but small in volume.[3] The holds of most ships sailing from England on long voyages were nearly empty.

Because of the competition for outward cargo, outward freights were low, and even—in appearance though not in reality—non-existent. 'Every master here was ready, as is well known, to take on board in England the goods of every English merchant gratis, for the sake of the Freight for the back-carriage.'[4] An analogy may be drawn from the reverse case in a very recent time. The English shipping industry during much of the twentieth century derived substantial competitive advantage from the fact that it had an outward cargo, coal, which in the days of steamships and steam engines was wanted in all parts of the world in vast quantities. Consequently, English ship-owners were able to quote low return freights to Europe.[5]

But appearances are deceptive. The burden of the cost of voyages in ballast, made as a habit and not exceptionally, fell upon trade, and was felt by the shipping industry only through consequent limitation of trade—except when there was competition from foreign shipping. In the long run, freights earned had to cover costs. Often the prices of goods brought to England were raised quite appreciably because one cargo had to bear not only its own carriage costs, but also the cost of the outward journey of a ship to fetch it.[1]

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[1] Calculated from P.R.O. Customs 3/3.

[2] These are tonnages of commodities. A ship's carrying capacity was determined in the first place by the weight of the goods which would bring her down to her minimum safe freeboard. But goods which (as normally packed) were of low specific gravity would fill the ship's hold before this maximum tonnage was reached. For these light commodities (flax, tobacco in hogsheads) carrying capacity was smaller than the *weight* the ship could carry. The tonnages of commodities listed above, therefore, in some cases understate the demand made for ship tonnage.

Timber was a light and, usually, awkwardly shaped cargo, and required ships specially designed to stow, in hold and on deck, maximum quantities of it, if anything like the tonnage which the ship was capable of bearing was to be carried.

[3] Up to 1678, and from 1685 to 1688, nearly all wine imported came from France. France took a certain amount of lead, tin and coal from England, and corn in a few years. Alone among the suppliers of a bulky commodity to England, France took a considerable volume of goods in return. But these went mainly to the Channel ports; and the wine was imported to England from the Biscay coast.

[4] *The British Merchant, op. cit.* I, 275. The writer is here referring to the French trade; he makes similar remarks on the Mediterranean trade in vol. II, 369.

[5] A. Kirkaldy and A. D. Evans, *The History and Economics of Transport* (n.d.), pp. 271–2.

Of course, where there is competition with carriers having two-way cargoes, those with cargo only one way operate under a crippling disadvantage. Dutch leadership in shipping affairs was based, ultimately, on their control of a two-way trade in bulk cargoes between the Baltic and southern Europe—the carriage of salt and wine from Spain, Portugal and southern France, along with their own catches of North Sea fish, in exchange for corn and timber products.[2] In Dutch ships, the bulkiest products of northern and southern Europe were exchanged between those regions. English trade with the Baltic (and Norway) presented a striking contrast. England imported the timber products, iron and occasionally corn, which she needed for herself; she exported to the Baltic cloth, tobacco and some minor products, of much smaller value than her imports, and of relatively trivial bulk.[3] The resulting difference in the operation of Dutch and English shipping is plainly revealed by the figures of ships entering the Baltic in ballast, as a proportion of all entries:[4]

	Dutch ships (%)	English ships (%)
1661–4	27	43
1684–7	47	62[5]

The historical reasons for the Dutch control of this two-way trade go back to the sixteenth century or earlier,[6] and Dutch dominance had been cemented by the development of specialized cheap shipping to handle these trades, as well as by the excellence of Dutch commercial organization and the closeness of personal links with Baltic merchants. The point for the English shipowner of Charles II's time was that the Dutch *were* impregnably entrenched, and unless part of the carrying trade *into* the Baltic could be wrested from them, they must maintain their position.[7]

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[1] In the twentieth century, the range of overseas alternative ports where bulk cargoes may be found is very much greater; bulk cargoes are becoming available throughout the year; winds do not have to be considered and voyage times are known precisely; and the telegraph makes possible the arranging of ladings and the direction of ships in all parts of the world. The seventeenth-century ship had to pick up a cargo from a small range of ports, often in a short season; long divergences to get cargo for part of the outward voyage might result in unexpected loss of time, which could ruin the main voyage in competition with other ships. Only in the Mediterranean could ships find worth-while short divergences for cargo.

[2] A. E. Christensen, *Dutch Trade to the Baltic about 1600* (Copenhagen, 1942), chs. v to x, shows this very clearly. His work is largely based on N. Bang, *Tabeller over Skibsfart og Varenstransport gennem Oresund* (Copenhagen, 1930), II, part 2.

[3] Sir Josiah Child pointed out (*A New Discourse of Trade* (4th ed. 1740), p. 112) that this was partly because the Eastland Company's monopoly of Baltic trade with England made it impossible for English traders from Spain or the Mediterranean to take goods directly into the Baltic, unless they were also members of the Eastland Company. But this was a minor obstacle (especially after 1672, when membership of the Company was made very easy) in comparison with the Dutch entrenchment in the trade.

[4] N. Bang, *op. cit.*

[5] The growth of the overall proportion of ships in ballast is probably an indication of the growing demand for northern products throughout Europe.

[6] For a discussion of them, see A. E. Christensen, *op. cit.* chs. II, IX; and V. Barbour, *Capitalism in Amsterdam in the Seventeenth Century* (Baltimore, 1950), ch. I.

[7] While the Dutch were at war between 1674 and 1678, English ships replaced them in this two-way traffic. Thus in 1675–7, when Dutch salt ladings into the Baltic had dropped from a normal 20,000 lasts a year to 5,600, English salt ladings rose from a few hundred to 16,400 lasts. (N. Bang, *op. cit.*) The English foothold was not quite lost after 1678, but English trade of this kind remained very small in relation to the Dutch until the latter part of the eighteenth century.

The Dutch were exceptional among the maritime nations in thus controlling a two-way trade in bulk products; but their case is of tremendous importance, for at its peak just after mid-century this Dutch northern trade must have absorbed a tonnage equal to the whole of the English foreign-going merchant fleet; and England's own trades with the Baltic and Norway, limited though they were by the difficulties of one-way cargoes, were in the 1680's among the largest users of English shipping tonnage. But apart from this special case, on which Dutch maritime supremacy was founded, nations had, on the whole, similar problems to one another in the long-distance carrying trades.

A partial solution to the problem of one-way cargoes was found, in a few cases, in triangular traffic. The clearest example was the Newcastle-Holland-Norway exchange, noticed above. In the two other cases of triangular voyages, the three exchanges involved were closely dependent on each other. Spanish wine was most commonly imported in the 'Sack ships' which sailed from the ports of Devon and Cornwall in the spring (sometimes calling at a French port for a small cargo of salt) to buy the catches of the fishermen off Newfoundland. Having done this business, the ships sailed from the Newfoundland harbours in August to sell their fish cargoes in Spain or Portugal, and when they had made their sales they were ready to take in the new wine as it came forward. A winter voyage home left time for refit before the spring, and the Newfoundland sailing, came round again. Again, a small part of the West Indies sugar crop was brought home by ships which had gone from England to West Africa to buy slaves for the West Indies, which they sold in exchange for sugar. This exchange was usually limited, before 1697, by the existence of company monopolies of the African trade.

III

The second of the 'utilization' factors affecting shipping services was the seasonal character of many trades, depending on weather conditions affecting the timing of crops or the feasibility of shipment.

The Baltic and Norway trades were carried on only in summer and autumn. In the central and north Baltic ports there was severe icing in winter, sometimes affecting places as far south as Danzig. In addition, flax and hemp (the chief exports of the north-east Baltic) depended on the seasonal flax crop;[1] and timber, the most important commodity shipped to England, was hauled down to the coast during the winter months when the ground was frozen hard.[2] Ships usually began to move out of English ports to the Baltic and Norway at the end of March, and the last sailings were in September or early October. The table on p. 64 illustrates the seasonal patterns in these trades.

The Hamburg and Bremen trades were also cut down in the depth of winter by the danger of icing of the Elbe and Weser. And of course the little trade with Russia, through Archangel, was carried on entirely in summer.

The wine shipments to England took place almost entirely in winter. Until 1678, and from 1685 to 1688, this trade was almost entirely in French wine; there was some importation from Spain and the Canary Islands, and of Rhenish wine through Holland: Portugal and Madeira were of little importance until after 1704. Shipment started at the end of September; and Roger Coke complained that this trading for French wines 'In the perillous months for Navigation of September, October, November and December' resulted in excessive loss of ships and seamen.[1] Heavy imports from France continued for six or seven months, but the other wine trades were usually dying away before the end of January.

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[1] In 1661 the Eastland Company 'to prevent the great damage by the unseasonable shipping of flax in winter' limited its movement from the Baltic to the period 24 March to 11 October, (F. W. Dendy (ed.), *Records of the Merchant Adventurers of Newcastle-upon-Tyne* (Surtees Society, 1899), II, 140).

[2] R. G. Albion, *Forests and Sea Power* (Cambridge, Mass., 1926), p. 145.

Month-by-month shipping movement, northern trades[2]

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
(1) Sailings from Hull, average of 1686 and 1687:												
Norway	—	1	3	4	4	3	2	—	2	2	1	—
Baltic	—	2	6	9	4	3	3	5	1	—	—	—
(2) London entries, 1686:												
Norway	4	2	2	2	36	15	42	10	26	13	25	18
Baltic	11	2	2	6	10	37	33	22	28	30	19	8
(3) Lynn entries, 1687:												
Norway	—	—	—	10	3	9	8	7	2	6	—	—
Baltic	—	—	—	—	—	2	2	3	1	1	—	—
(4) Passages through The Sound, 1681:												
East-bound	1	4	80	227	237	124	287	175	97	59	24	6
West-bound	—	7	14	85	171	218	225	245	134	135	62	49

Month-by month shipping movement: southern wine trades[3]

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
London entries with wine, 1664:												
France	24	2	13	21	9	5	2	—	2	20	13	17
Spain	3	3	9	5	1	2	—	—	—	—	22	23
Canaries	10	1	4	2	—	1	—	1	—	1	2	23

The import of fruit from Spain and Portugal—in which the raisin trade was far the most important—was similarly seasonal, raisins and figs coming just before the winter wine shipments, and oranges and lemons throughout the winter.

East India sailings homeward were governed by the time of the monsoon and the need to avoid a winter passage of the Cape of Good Hope,[4] and charter parties provided for special demurrage if the monsoon was missed.[5] If the ships had not sailed from the west coast of India well before the end of January, they were likely to be held up until July.

[1] *Discourse of Trade* (1670), p. 38

[2] Figures for items (1) to (3) from P.R.O. Port Books; for item (4) from N. Bang, *op. cit.*

[3] From P.R.O. Port Books. For the year 1664, a London Port Book for wine only survives. To eliminate from the figures most of the ships which were not carrying wine as their main cargo, only those importing at least 20 tons of wine have been counted here.

[4] 'It is very destructive to those (East India) voyadges to stay a few dayes beyond the 20th of January because by that meanes those that doe stay but a few dayes beyond that time doe very much endanger the loss of their passage for that yeare and doe runne very great hazard of looseing their ships and goods by reason of those excessive storms that constantly arise soone after that time in getting about the Cape' (P.R.O. H.C.A. 24–114; *Mayflower*, 1664).

[5] *Samaritan* in 1660 and *Mocha Frigate* in 1693 were to be paid four months demurrage if not despatched before 20 January 'or soone enough after to save her monsoon for that yeare' (P.R.O. H.C.A. 15–18; Rawlinson MSS. (Bodleian Library) A. 303–253).

The American crops, too, were seasonal, and their shipment was timed by weather conditions. In the Caribbean, August to October was the hurricane season, and, except on the smallest islands, paths to the coast were unusable from October until the rains dried up in December. The shipping season for sugar was, therefore, during the first six months of the year,[1] and ships tried to arrive in the islands as early as possible during the period to get the best of the freights. Arrivals in England were clustered in the summer and autumn.

Month-by-month shipping movement: arrivals from the West Indies[2]

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
London, 1686	16	7	11	14	12	25	29	21	27	25	19	13
Bristol, 1687	7	1	2	2	6	4	4	8	3	3	1	1

The tobacco crop was harvested, in Virginia and Maryland, in August and September, but it had to be dried before packing, so shipment began in the early spring.[3] It arrived in England during the summer, and the Virginia ships usually sailed again from England at the beginning of the winter.

Month-by-month shipping movement: arrivals from Virginia and Maryland[4]

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
London, 1686	2	—	9	7	12	3	23	10	8	5	1	1
Bristol, 1687	2	1	4	3	3	4	4	3	1	1	1	—
Liverpool and Lancaster, 1687	—	—	—	3	1	6	6	1	—	—	—	—

In the very long-distance trades, seasonality did not involve an intolerable degree of under-utilization. The sugar and tobacco crops were obtained at the end of very long voyages, and loading was likely to be protracted (as will be shown below). It was almost impossible for a ship to make two voyages during the crop season[5] and in practice the voyage out and home, added to loading time and the minimum necessary stay in the home port, rarely took less than six months and much more commonly lasted eight or nine. Sometimes such a ship would fill in two or three autumn months with a Baltic or a wine voyage; occasionally the ship which had made an exceptionally fast return trip would re-cross the Atlantic to pick up whatever was available in the way of tail-of-the-season cargo.[6] But the great majority of America and West Indies traders regarded one voyage out and home in a year as a year's proper employment of a ship.

The problem of seasonal cargoes was most serious in the short and middle-distance trades, above all in the winter carriage of wine and fruit and the summer carriage of timber. These trades seem obviously complementary; yet interchange of ships between them was, in fact, on a very limited scale. The Port Books show that it was most uncommon for Norway timber ships to carry wine during the winter. The obstacle to switching between these two trades (which between them accounted for nearly half the tonnage of shipping entering English ports each year) was the specialized character of the ships in the northern trades. Very often they were Dutch-built ships, specially built for timber carrying, acquired as prize or by purchase. Often they were old English ships, the cast-offs of other trades. In either case, they could be and were used when they had deteriorated into a leaky and rotten condition, long after they had ceased to be suitable for carrying goods easily damaged by sea water. For this reason, a great many of them were limited to the carriage of timber or coal.

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[1] C. S. S. Higham, *The Leeward Islands under the Restoration* (Cambridge, 1921), p. xi.

[2] From P.R.O. Port Books.

[3] Lewes Roberts, *The Merchants Mappe of Commerce* (3rd ed. 1677), p. 53.

[4] From P.R.O. Port Books.

[5] For the difficulties which the Pinneys encountered in trying to get two West Indies voyages a year out of their ships at the close of the eighteenth century, see R. Pares, *A West India Fortune* (1950), pp. 227–8.

[6] Many ships entering from America went on to Ireland, or to Holland or Hamburg. But these were simply carrying their cargoes on to their true destination, having complied with the Navigation Acts by entry at an English port.

For the same reasons, the capital investment in them was very small, and the urge towards maximum utilization to cover capital charges may have been weaker than for more costly vessels. Much of the Norway shipping was, therefore, laid up in winter. When it appeared elsewhere, it was usually not in a complementary trade, but in the East coast coal trade, although this, too, was mainly carried on in summer.[1]

The French wine trade was, in fact, carried on by vessels drawn from many parts. A number of ships traded with the south of France all the year round, for there was a considerable salt trade. Others were drawn in winter from trade with the French Channel ports, Flanders and Holland; and many coasters were occupied during the winter in fetching wine. A number of larger ships did come in from the Baltic trade; about a quarter of the ships which entered English ports from the Baltic in summer made one or two wine voyages during the winter.

IV

The third of the 'utilization' factors was the variability of the size of crops from year to year. This did not always have great effect on shipping. The import of French wine (when it was not prohibited) did not show very great year to year variations,[2] presumably because the English was a fairly small proportion of the total demand, so that fluctuations in the size of the crop were to some extent cushioned from affecting the volume exported. Similarly, the timber-exporting regions found a far more important market in Holland (with its many customers) than in England; changes in English imports were probably due far more to changing English naval requirements than to variations in the timber supplies coming down to the Scandinavian ports. The East India trade, of course, was scratching the surface of the vast local commerce of the coasts of the Indian Ocean, and in any case much of its import was of goods not influenced by seasonal supply.

The greatest variations were in the trade in corn, since English production fluctuated above and below a fairly stable consumption. Usually, neither import nor export was large; but in occasional peaks they made very great demands on shipping; e.g. export in 1676–8 and 1682–4 (when some tens of thousands of quarters were sent abroad) and for import in 1680–1.[3] The export was short-distance—to Holland or France—and was probably carried on as a by-product of, and diversion from, the much larger coastal corn trade.

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[1] 'In time of war between the Dutch and the French, the Newcastle ships are so employed in other trades, as the home-vent of coal is not only not thoroughly supplied, but our Norway merchants cannot hire enough to furnish us as at other times' (R. Coke, *How the Navigation of England may be Encreased* (1675), p. 91).

[2] See the table in *H. of C. Journals*, XVII, 363–5.

[3] N. S. B. Gras, *The Evolution of the English Corn Market* (Cambridge, Mass. 1926), Appendices B and C.

Imports were derived from the Baltic, and seem to have been provided chiefly by the use of foreign shipping.

The American tobacco and West Indies sugar crops were exported almost in their entirety to England. The ships had to sail from England for these crops before the yield was known. Fluctuations in the crops were reflected, not so much by the number and tonnage of ships importing them, as by the difficulties those ships had in getting cargo—measured by half-empty holds and low freights when crops were poor, and by high freights and quick voyages when crops were good. This is true also of some minor crops, such as currants from the Greek islands, and Canary wine.

For the shipping industry as a whole, seasonal variation of crops was a less important factor than the other two which have been discussed; it required, perhaps, some general surplus capacity in the industry to meet the demands of the best years.

V

But by no means all under-utilization was inevitable, following from the one-way, seasonal or variable nature of the demand for shipping services. One of the most striking things observed, when examining the use of ships (in the Port Books or the Admiralty Court records) is the low proportion of time spent at sea to time in port. In part, these long stays in port were due to technical reasons, and to that extent cannot properly be termed under-utilization. The quick turn-round of the modern steamship in its home port was quite impossible for the seventeenth-century sailing ship. Minor repairs, re-rigging, equipment with new sails were required on an extensive scale after every long voyage. Major repairs to the hull, and re-masting, were frequent needs. If heavy weather were encountered, major repairs might have to be undertaken away from home, and re-done on return.

There were, however, other reasons for delays in port. One of them was the difficulty of getting cargo together in many of the harbours where bulk imports were loaded. Wine, tobacco, sugar, raisins and oil, though they were imported in thousands of tons, were almost always shipped by individual merchants or planters in lots of five or ten or twenty tons; very rarely as much as a hundred tons by one individual in one ship. These cargoes had to be sought by ships' masters or by owners' agents;[1] sometimes, too, outward cargoes had to be sold and their proceeds collected. The whole proceeding was incomparably more leisurely than it is today, when everything is arranged in advance by telegraph and radio. Charter parties for Portugal or the Canaries allowed for a stay in the loading port abroad of forty to forty-five working days; in the Virginia trade, up to 100 working days were allowed for loading.[2] If cargo had been waiting on the quayside, any ship could have been loaded by its crew with any cargo in two days. At home, too, cargo had to be collected if it were possible, or arrangements made for the ship's hire, or the owners had to collect together their own goods for the outward lading. And these arrangements could not be seriously begun by the London merchant until the messenger rode in from the Downs to announce that his ship was coming into the river.

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[1] Even when a vessel was under charter, the charterers very often needed more cargo to fill the ship than they could supply themselves.

[2] Ships encountered long delays in the West Indies, partly in collecting cargo, partly because of difficulty in securing payment for goods taken out from England. But the only surviving charter parties for the West Indies trade are time charters, in which limitation of the stay in the loading port would be pointless.

There is a less tangible reason for under-utilization. In good years no less than in bad, owners of ships in long-distance trades seemed reluctant to fill in short periods with short voyages to nearby ports. In part, this was due to the unsuitability of their vessels—their size and build—although there were opportunities for such ships in European waters. In part, it was probably a reluctance to risk in winter, for a fairly small return, the vessel which was bringing in adequate seasonal profits. These reasons may constitute a full explanation. But a further impression grows from the evidence; an impression of some rigidity of mind which saw a vessel committed to one function and would not be bothered to fit it to another. Whatever the reasons, the fact is undoubted.

VI

Because there was under-utilization of capacity in these various forms, the supply of shipping services was fairly flexible in the short run. Ships which were under-utilized because of unwillingness to face winter risks for small returns, or simply through owners' lack of interest in possible alternative uses, could be attracted into new forms of activity, gradually, by rising freight rates. Moreover, large crops speeded ships' turn-round times; the time-consuming activity of building up a cargo in small parcels was reduced to a week or two instead of two or three months, so bringing down the time for a voyage from eight months to six, from four months to three; and to that extent the carrying capacity of the industry during the year was enlarged by enabling extra voyages to be made.

In most trades, therefore, fluctuations in freight rates appear to have been very moderate; for most trades, there was much scope for increasing supply by extending utilization before, at the wall of maximum possible utilization, freight rates soared up as demand fought for a finally fixed supply.[1]

But there were limits to the area within which such possibilities existed. It has been shown that most of the larger bulk trades were crop trades; except in the case of timber there was competition to get goods to the market early to obtain the best prices. To all places on the continent of Europe, extra shipping could be drawn quickly when the size of the available crop was realized, for by overland routes the furthest corners of Europe were within three weeks' communication of England. The position was, however, different in transatlantic trade. Advice boats might, under the most favourable conditions, make a passage to Virginia and back in under two months, or to the West Indies in a slightly longer time. This was altogether too long a period, added to the time of a cargo ship's outward voyage, to call up extra ships to get the crops home during the normal marketing season.

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[1] The economics of freight rates have received very little attention. The most useful modern work is T. Koopmans, *Tanker Freight Rates and Tankship Building* (Haarlem, 1939) which has a wider application than its title suggests. He constructs a theoretical model, for ships in a bulk trade, in which there is little scope for changing the degree of utilization of the fleet except by laying up ships; consequently competition forces rates down to prime costs when any ships at all are laid up, and freighters' competition forces rates up violently when all ships are employed. It appears to be a not unrealistic demonstration of reasons for the sharp movement of rates in the tramp shipping market. The difference between this and seventeenth-century conditions in general is in the penumbra of uncertainty which frames the concept of 'full utilization' in the early period; 'under-utilization' could be extensive without arousing comment, before owners found themselves with a laid-up ship, all ready for sea, for which they could find no occupation. So the sharp change from an almost horizontal to an almost vertical supply curve, which Dr Koopmans shows represents some important present-day situations, is a much more gentle change in the seventeenth century. Some useful remarks on this subject will be found in W. A. Lewis, 'Some Interrelations of Shipping Freights', *Economica*, n.s. VIII (1941); and D. Marx, *International Shipping Cartels* (Princeton, 1951), Ch. I.

The carrying facilities to lift these sugar and tobacco crops were in the main determined, in advance of the ripening of the crops, by the number and tonnage of the vessels which set out from England to arrive in the plantations at the beginning of the loading season. Consequently, if the crop was large there was fierce competition among planters for shipping space—which meant high freights, quick loading, and a few ships returning for a second voyage during the season. But up to a point it was better to pay high freight than to wait for a second call of ships four or five months later. If the crop was small, there was strong competition among masters to get cargoes; low freights, half-empty ships and long delay in loading. Since the ships were committed to the voyage, any cargo at almost any price was better than nothing; there was no question of refusing freights because they did not cover prime cost, because prime cost was virtually nil. The alternatives to returning home were unsatisfactory; ships did occasionally go from the West Indies to Virginia (or, even more rarely, the other way) in search of cargo, or engaged in local trade during their months of waiting for the new season. But these were not good expedients. It was undesirable to keep large ocean-going ships in the West Indies during the hurricane season; and local trading in North America faced the intense competition of New England ships. Moreover, if ships stayed too long in those parts they faced the danger that their crews would melt away by death and desertion, and fresh crews were very hard to obtain.[1] In these trades, therefore, freights might be expected to fluctuate substantially from year to year, and they appear to have done so.[2] Transatlantic transport was a gamble; a gamble in which the odds either way might be limited, for many shipowners, by firm arrangements with planters and with merchants in England; but nevertheless with wide possibilities of loss or gain.

VII

For all these reasons, statistics of trade values give no indication of the relative importance of various trades to the shipping industry. The table below shows how different was the relative importance of the principal trades first, as measured by the value of commodities (figures for the years 1699–1701),[3] second as measured by the tonnage of ships entering English ports from each region in 1686; third as measured by the approximate tonnage of English-owned ships which engaged in the trade of each region in the same year;[4] and fourth the total tonnage of English ships which would have been engaged in each trade if no foreign ships had participated.[1]

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[1] John Wood's ship, delayed at Barbadoes in 1675, lost most of its crew there, 'so that of 42 he had not left above 12 or 14, and severall of them he kept detayned in prison, to secure them'. (P.R.O. H.C.A. 13–131.)

[2] Big fluctuations are shown in the freight rates paid by the Royal Africa Company in the West Indies. Mr K. G. Davies, of New College, Oxford, has kindly shown me the figures which he extracted from the Company's records.

[3] From the P.R.O. Customs Ledgers, Customs 3–3/5. An adjustment has been made to these figures. Wine imports in 1699–1701 came from Spain and Portugal—in the region Southern Europe. Wine imports in 1686 (the year for which the shipping statistics are available) were mostly from France—in the region North-West Europe. The trade figures have therefore been adjusted, to correspond with those for shipping, by transferring £400,000 from Southern to North-West Europe, representing this wine trade which was formerly French.

[4] This is an unreal figure, for many ships moved to and fro between foreign and coastal trade. But if all foreign trade were carried on by ships which engaged exclusively in it, this is the size of the merchant fleet which would have been required to conduct that part of foreign trade not handled by foreign ships. The figures under this and the next heading are in any case *very approximate.*

The immense importance of the American trades as employers of English shipping is clearly shown.[2] It was a growing importance. On the eve of American Independence, one-third (in value) of English foreign trade was carried on with America and the West Indies,[3] and at least half the English foreign-going ships were engaged in transatlantic trades.[4] Colonial shipping participated extensively in the trade.

Regional analysis of trade and shipping: (*a*) figures of value and tonnage

	Total	Northern Europe[5]	North-west Europe[6]	Southern Europe and Mediterranean[7]	America	East India
Value of trade, 1699–1701; £'000	12,268	918	5,637	2,863	1,958	892
Entries of ships, 1686; '000 tons	484	151	170	71	86	6
English ships engaged, 1686; '000 tons	210	32	48	38	80	12
Total ships engaged, 1686; '000 tons[8]	241	54	54	38	83	12

Regional analysis of trade and shipping: (*b*) percentages

	Total	Northern Europe	North-west Europe	Southern Europe and Mediterranean	America	East India
Value of trade, 1699–1701	100	8	46	23	16	7
Entries of ships, 1686	100	31	35	15	18	1
English ships engaged, 1686	100	15	23	18	38	6
Total ships engaged, 1686	100	22	22	16	35	5

The seventeenth-century expansion of the shipping industry was not accompanied by substantial advances in English shipbuilding techniques. The Dutch, faced with the problems of maritime expansion a century earlier, had met them in part by accepting specialization to the point of abandoning all attempts at self-sufficiency in food production; and in part by a technical revolution in shipbuilding, which produced the *fluit* in 1595 and a whole series of other specialized craft in the following decades, built and operated at low cost, and so economizing capital and labour. The product of this revolution was in competition with English ships throughout the seventeenth century; but in one way or another—through purchase or as prize—the new kinds of ships came into English hands in large numbers.[1]

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[1] Shipping statistics calculated from my (unpublished) London Ph.D. thesis, *The Organization and Finance of the English Shipping Industry in the Later Seventeenth Century* (1955), pp. 50, 53–4, and Appendix A.

[2] It is, in fact, understated by the figures. A large part of the import trade with northern Europe was in materials for shipbuilding and repair; to that extent the northern trades were ancillary to the English participation in all other carrying trades, and particularly to the longer-distance ones in which large ships were used, since large ships had need of proportionately more foreign materials than small ones did.

[3] P.R.O. Customs 17–2. The values are, of course, the 'official' values.

[4] Shipping figures for 1771–3 in P.R.O. B.T. 6–185.

[5] Russia, Baltic states, Norway and Denmark.

[6] From Hamburg to the south of France, inclusive, and the British Isles outside England and Wales.

[7] Spain and Portugal and their islands, the Mediterranean.

[8] The fourth category described above.

The result was an economy of English resources; thousands more seamen would have been needed late in the seventeenth century if the English merchant fleet had not contained great numbers of Dutch-built ships. On the other hand, it is likely that the great acquisitions of foreign-built ships during the wars of the second half of the seventeenth century slowed or prevented English technical development, by blunting the urgency of the need for it.

The English shipping industry, therefore, meeting expanding demands without great modification of its technical methods, came during this period to absorb a surprisingly large part of the nation's labour force and of its capital. Petty, for example, estimated the capital invested in shipping at £3 million in 1665, as compared with £31 million 'merchants' stock, furniture etc.' which was to him all the nation's property outside real estate and coin.[2] Today, some 5 per cent of all *fixed* capital (other than buildings) is in shipping;[3] evidently Petty would have put the proportion in his time much higher.

More striking is the industry's call upon labour. Petty estimated the number of seamen at 40,000, or alternatively 48,000, in the early 1670's;[4] Gregory King put the number at 50,000 in 1688.[5] This was in a country with a total population —overwhelmingly rural—of about 5½ million. It is 1 per cent of the total population; seamen are ⅛ per cent today. It is between 10 per cent and 20 per cent of the non-agricultural working population—one cannot be more precise— as compared with ½ per cent today. According to King it was little less than the number of 'artisans and craftsmen' of all kinds. Moreover, great numbers of people were employed in shipbuilding and repair and the allied occupations (making ropes, sails, blocks, ironware etc.) and in providing sea stores and victuals; Petty, probably exaggerating, placed their numbers rather higher than the number of seamen.[6]

There can be little doubt, then, that shipping was one of the three or four largest employers of wage labour in the country,[7] and it was almost certainly the largest user of fixed capital other than buildings.

The rate of growth of the industry slowed during the earlier decades of the eighteenth century, but population was nearly static, and the opportunities of acquiring Dutch-built ships were limited.[1] They were partly replaced, until after American Independence, by ships built in North America,[2] but the defection of the colonies seems to have compelled English shipowners to get cheap and cheaply operated ships built in Britain itself. The development of merchant ship types before the late eighteenth century (other than East Indiamen) has never been investigated.[3] But statistics point plainly to significant change. In 1787, 1,080,000 tons of English-owned ships (91 per cent English built) were manned by well under 100,000 seamen.[4] A hundred years earlier, a merchant fleet of well under a third of this tonnage had required more than half as many seamen.[5]

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[1] Miss Barbour estimates that between a quarter and a third of English shipping tonnage in 1678 was foreign-built ('Dutch and English Merchant Shipping in the Seventeenth Century', *Econ. Hist. Rev.* II (1929–30) pp. 289–90). Her figures are, if anything, too low.

[2] Study of the seventeenth century does not create a feeling of trust in its statisticians. This estimate of Petty, for example (from *Verbum Sapienti*, in C. H. Hull (ed.), *The Economic Writings of Sir William Petty* (1899), I, 106) values ships at £6 per ton. In *Political Arithmetick* (in the same volume) he puts the value at £7½ per ton, and on p. 251 at £8 per ton—this, the editor tells us, had been altered by Petty from an original £9 per ton. Since the figure used here is his lowest, and since his estimate of other kinds of personal wealth (of which a large part must be household furniture) seems a very high one, it probably does not over-estimate the relative importance of shipping.

[3] *The Economist*, 22 January 1955, p. 294.

[4] *Political Arithmetick*, *op. cit.* pp. 276 and 292.

[5] Tables of Population, reproduced in G. N. Clark, *The Wealth of England* (1946), pp. 192–3.

[6] *Political Arithmetick*, *op. cit.* p. 293.

[7] Above all, since nearly a third of English shipping (including coasters) was London owned, and much more than half the shipping traffic was with London, an extraordinarily high proportion of London's population must have depended directly upon the sea for its living— probably more than a quarter.

During the late seventeenth century, therefore, the English were entering the carrying trade on a scale, and at a pace, that must have put considerable strains upon the whole economy. Holland, which in proportion to its size was committed even further to its shipping industry, had early made substantial adjustments both to the rest of her economy and to her shipping techniques. England, on the other hand, lavished resources of both capital and manpower on this protected and thriving industry. Nearly all contemporaries looked approvingly at this. They were not merely concerned about saving money which might have been paid for freight charges to foreign shipowners. Most of them assumed that, if the Navigation Acts were not so enforced as to exclude the Dutch from the carrying trade between England and America, Norway and the Baltic, and from all participation in English colonial trade, the English would be driven from those trades completely. There is no direct means of judging whether this view was correct. The experience of the years 1643–50 appeared to confirm them; but it is admittedly hard to distinguish, in that period, the relative influences of civil war and of the non-enforcement of restrictions on colonial trade.[6] Nevertheless, it is surely reasonable to suppose that the English could hardly have continued to carry the products of the colonies to the continent of Europe, and to share in their marketing, in the teeth of competition from the far more efficient Dutch shipping industry and the unparalleled Dutch merchanting organization, if the law had not compelled the employment of English ships, and (to some extent) of English merchants.

The effects of the Navigation Acts, which so many writers have endeavoured to assess,[7] were mainly negative, and therefore hard to estimate. They prevented some things happening which quite probably would otherwise have happened, and which might have had a decisive effect on the whole of England's economic —and, indeed, on her political—future. If they did indeed preserve for English business men the American trade and some substantial part of the trade and traffic with Norway and the Baltic, then some hundreds of thousands of pounds a year were saved from finding their way into the pockets of foreign carriers, and great amounts of profit, earned by English merchants and shipowners, were prevented from going to the Dutch.

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[1] After 1662, ships which were bought from foreigners were not treated as English (14 Charles II, *c.* 11); and Dutch-built prizes were less easy to come by when the wars with the Netherlands ceased.

[2] R. Champion, *Considerations on the Present Position of Great Britain and the United States of America* (1784), p. 14, says that nearly a third of the ships engaged in British commerce immediately before the War of Independence were American-built.

[3] Mr G. S. Laird Clowes, in his *Sailing Ships, their History and Development* (1932), p. 89, says 'For the early part of the eighteenth century, it is extraordinarily difficult to speak in any detail, for it is only by the merest accident that numerical details or even accurate pictures have survived.'

[4] B.M. Add MSS. 38429–31.

[5] If, to the figure of 210 thousand tons of English ships 'engaged in foreign trade' on p. 70, above, there is added Professor Harper's figure of ships in coastal trade and fishery (L. A. Harper, *The English Navigation Laws* (New York, 1939), p. 339) a very approximate total of 350,000 tons is arrived at. As to seamen, see p. 71 above.

[6] See G. L. Beer, *The Origins of the British Colonial System, 1578–1660* (New York, 1922), ch. XI.

[7] In recent years, L. A. Harper, *op. cit.*; C. M. Andrews, 'The Acts of Trade', *Cambridge History of the British Empire*, vol. I; O. A. Johnsen, 'The Navigation Act of 1651', *History*, XXXIV (1949).

If the writers of the time were right in their apprehensions, indeed, very much more than this was involved. If the commercial links binding British America with Europe had been largely in foreign hands, would the English interest in America have prevailed in the evenly balanced struggles with France in the eighteenth century? Without the great recruitment of seamen which was required to man the exclusively British merchant fleet trading with those parts, could an English navy have been manned in wartime on the scale needed in those wars? Without the great profits made in colonial trade, the fortunes accumulated in it and the connexions established with growing markets, would English industrial development in the latter part of the eighteenth century have taken the course it did? Adam Smith, writing when the benefits of the Acts had been fully achieved, and when their disadvantages were about to become of greater importance, must have had some such considerations as these in mind when he turned aside, reluctantly, from free-trade advocacy to write 'As defence, however, is of much more importance than opulence, the act of navigation is, perhaps, the wisest of all the commercial regulations of England'.[1] Speculation on historical might-have-beens is notoriously unprofitable. But at least it can provoke, in this connexion, an ironical thought: that the vast edifice of nineteenth-century industrialism, which nurtured the free trade theories with which the Navigation Acts were rent, might never have come into being but for the enactment of these measures by the unenlightened legislators of Stuart times.

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[1] *The Wealth of Nations* (Everyman edition), I, 408.

THE ASCENDANCY OF THE SAILING SHIP 1850–85[1]

By GERALD S. GRAHAM

I

IN the 1851 edition of his *Progress of the Nation*, Porter remarked on 'the extraordinary rapidity' of the development of the steam engine. 'When first adopted few persons were so sanguine as to suppose that the utility of steam-vessels would ever be experienced except in inland river navigation, or for short distances along the coast; a very few years have sufficed for their general introduction in all the seas and rivers of Europe, and at this moment their employment serves as a means of drawing closer the connexion between the old and the new world.'[2]

In the 1820's the Channel, Irish Sea and North Sea ports had been reached; in the 1830's, the Mediterranean track ran to Malta, Egypt and eventually Constantinople, and after 1835, to India via the Isthmus of Suez. By 1840 there were regular scheduled sailings to the United States, as well as to France, Holland, Belgium, Hamburg, Cadiz and Lisbon. After 1840, the paddle-wheeler reached out from India to China, and gradually from the British Isles to the West Indies and South America. Between 1842 and 1847 H.M. steam sloop *Driver* became the first and for many years afterward the only steam vessel to circumnavigate the globe. By 1852, a bi-monthly service on the west coast of South America linked Valparaiso with Atlantic steamers by way of the Isthmus of Panama. By that same date, almost the whole British trade of the Mediterranean and Levant had become the monopoly of the iron screw steamer, assisted by sails.[3]

It has been customary to suggest that the ensuing growth of the world-wide British trading empire was based principally on the steady development of this form of transport; that British predominance in shipbuilding was the consequence of such factors as the skill and inventiveness of marine engineers, cheap coal and the efficiency of the iron industry, which combined to effect the 'triumph of steam'. Perhaps the emphasis on discovery has been responsible for such descriptive phrases as The Age of Iron and Steam; certainly the attention given to experiment, invention and machine-manufacture has tended to divert attention from the commercial sailing ship, and to create the false impression that the steamship was the key to nineteenth-century imperial development. 'It was Great Britain's unrivalled command of swift steamer communication that made the British Empire possible', wrote Mrs Knowles in her notable pioneer volume, *Industrial and Commercial Revolutions* (p. 195).

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[1] A synopsis of this article was read at the International Congress of Historical Sciences in Rome, September 1955.

[2] G. R. Porter, *Progress of the Nation* (1851), pp. 319–20.

[3] Lloyd's Register gives a total of 153 British steamships for the year 1852–3; but shipowners were not obliged to have their vessels classed at Lloyds, and many first-class ships never appeared in their lists. Moreover, from 1839 to 1890 Lloyds recorded only such vessels as met their own rigid requirements of survey. To the shipbuilder a high Lloyd's classification was a certificate of safety, and in the 1850's and even much later Lloyds viewed iron and steam with marked distrust. The calculations of observers like Porter (who was not suspicious of the steam intruder) are obviously nearer the truth. For 1850, Porter estimated the total number of steamers belonging to the merchant marine of the United Kingdom to be 1,187, with a total tonnage of 168,474. (*Progress of the Nation*, ed. F. W. Hirst (London, 1912), p. 535). This is also the official estimate as contained in 'Tables showing the Progress of Merchant Shipping in the United Kingdom and the Principal Maritime Countries' [Cd. 7,035] Accounts and Papers, LX (1913), p. 60.

Actually, the transition from the sailing ship to the iron and steel cargo steamer was not completed for another three decades or more after 1850; the great days of sail lie not before but after the middle of the century. As long as the routes to the Far East lay round the Cape of Good Hope, the commercial steamer could not hope to compete; and even after the opening of the Suez Canal, much of the traffic to the Bay of Bengal, the East Indies and Australia was still carried by the sailing ship. The cutting of the Suez did *not* mark a turning-point in the life of sail.

No new data is required to substantiate this argument; and perhaps the only justification for putting it forward now is the need to refute the commonly held belief that the mechanical revolutions which produced the reliable steamship, were in close sequence and pressing.[1] The historical compression of a long era of experiment has often given a misleading impression of automatic and continual progress.

The incredible defiance of the Industrial Revolution by sail during the second half of the nineteenth century was partly the consequence of new developments in sailing ship construction, and chiefly the result of the long and costly delays that occurred in the development and adaptation to the iron ship of an effective high-pressure steam engine with adequate boilers, condensers and screw propellers. The task of combining three components—hull, engines, and paddles or screw propellers—each of which was a highly complex study in itself, in a manner that would allow a large vessel to travel economically, quickly and safely over thousands of miles of water, presented problems far more obstinate than those confronting the engineer on land. A cursory study of only a few of the mechanical or structural difficulties makes clear that the long years of exacting experiment and wasteful expenditure cannot be explained to any appreciable extent as the consequence of Admiralty or shipbuilders' conservatism and abhorrence of innovation. Satisfactory solutions depended on theoretical attainments and machine skills which did not exist at the beginning of the century, and which could hardly be said to flourish ashore, outside the industrial field, before the fifties.

It would also be a mistake to assume that the iron fields of the United Kingdom, along with British technical skill in dealing with iron, gave to Britain by the end of the 1850's, an immediate and vital advantage over the United States (or any other state) whose shipbuilding industry in the age of sail was based on cheap and readily available timber.[2] Iron was a material far better suited to screw propulsion than wood; for long and strenuous ocean voyages, the evolving screw propeller required the tensile strength of an iron hull. But iron proved to be a stubborn and uncertain medium, especially in the hands of craftsmen trained to handle timber,[1] and by the mid-1850's had superseded wood only in the construction of steam passenger or small experimental war vessels. As for the screw-propelled merchant ship, only in local or restricted sea areas such as the Channel or the Mediterranean was it an economical proposition. On coastal or Channel voyages of say, 500 miles or thereabouts, such a vessel could carry merchandise at about one-third the cost of a full-powered paddle vessel, and because of the additional speed especially in regions of irregular winds could carry the same cargo at about one third less than the pure sailing ship.[2] On distant voyages, however, where masters could reckon (especially after Maury's charts were published) on uniform and constant winds such as the Trade or the Monsoon, the large wooden sailing ship could still carry goods more cheaply than any other kind of vessel.

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[1] I am indebted to my friend Major T. H. Thomas of Cambridge, Massachusetts, who first suggested to me the need for such a reappraisal, and to whose researches on the development of the steam-engine I owe much.

[2] Cf. Basil Lubbock, *The Colonial Clippers* (Glasgow, 1921), pp. 195–6; 'Iron killed the competition of our American cousins...; A. H. Clark, *The Clipper Ship Era, 1843–1869* (New York, 1910), pp. 314–15; A. W. Kirkaldy and A. D. Evans, *The History and Economics of Transport* (London, 1915), pp. 248–9; Knowles, *op. cit.* p. 193, 'When the iron steamer came in the situation changed completely...'; also, pp. 304, 305.

Although it could stand unlimited driving in high seas, had more room for cargo than the wooden ship of the same size, and was safer from fire, the iron ship could rarely equal the speed of the wooden on distant voyages, owing principally to fouling of the bottom.[3] Over the long routes, where speed was a vital consideration (e.g. the tea trade to China), the coppered wooden sailing ship or the lighter and more spacious composite ship with its iron frames sheathed in oak or teak planking, held at least until 1870 an enormous advantage over both steamer and iron sailer.[4] 'Some gentlemen make light of the question of fouling,' remarked a member of the Institution of Naval Architects in 1864. 'I took up the "Shipping Gazette" the other day, and looked at all the ships overdue from China, the longest average voyage we have. They were all of them over six months on a voyage, which is from two to three months more than they ought to be. Out of seven so overdue six are iron. Will any gentleman tell me that an iron ship can be cheap, can be profitable, if she runs the risk of being from two to three months overdue?'[5] 'The sailing-ship, when I knew her in days of perfection', wrote Joseph Conrad,

> was a sensible creature. When I say her days of perfection, I mean of build, gear, seaworthy qualities, and ease of handling, not the perfection of speed. That quality has departed with the change of building material. No iron ship of yesterday ever attained the marvels of speed which the seamanship of men famous in their time had obtained from their wooden, copper-sheeted predecessors.

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[1] See Sidney Pollard, 'The Economic History of British Shipbuilding 1870–1914' (Ph.D. Thesis, University of London, 1951), p. 32; also W. H. White, *A Manual of Naval Architecture* (London, 1877), pp. 326–9, 369–70. In 1863 the Controller of the Navy, in a statement on wood and iron in the construction of ships, remarked on 'the extreme uncertainty as to the quality of the material used, in fact, the small quantity of real good iron of the best ship-building qualities that can be found in the market'. C. F. T. Young, *The Fouling and Corrosion of Iron Ships* (London, 1867), p. 16. See also H. H. West, 'On the Quality of Materials used in Shipbuilding', *Trans. of the Inst. of Naval Arch.* XXIII (1882), 163–5.

[2] John Bourne, *A Catechism of the Steam Engine* (4th ed. London, 1856), p. 406.

[3] The cost of cleanings, coatings, loading and unloading stores, injury to rivetheads, wages of officers and crew every six months, was enormous. It was estimated that the P. & O. Steamship Company expended some £70,000 a year in keeping the bottoms of their vessels clean. (Young, *op. cit.* p. 52. Various preparations, including compositions of oxide of copper were tried in the fifties and sixties without success. (Cf. John Fincham, *A History of Naval Architecture* (London, 1951), pp. 388–9.)

[4] A. W. Kirkaldy, *British Shipping, Its History, Organization and Importance* (London, 1914), pp. 31–2; see also, J. D'A. Samuda, 'On the Influence of the Suez Canal on Ocean Navigation', *Trans. Inst. Naval Arch.* XI (1870), 2; and Romola and R. C. Anderson, *The Sailing Ship* (London, 1926), p. 196.

[5] Quoted in Young, *op. cit.* p. 51.

> Everything had been done to make the iron ship perfect, but no wit of man had managed to devise an efficient coating composition to keep her bottom clean with the smooth cleanness of yellow metal sheeting. After a spell of a few weeks at sea, an iron ship begins to lag as if she had grown tired too soon. It is only her bottom that is getting foul.[1]

Admittedly, the iron ship made great progress in the 1860's and 1870's; but during this period the majority of the ocean carriers of the world were sailing ships, and most of these were still built of wood. In 1850 the net tonnage of iron ships built was 12,800 as against 120,000 timber; in 1860, 64,679 as against 147,000 timber; in 1870, 255,000, as against 161,000 timber and, in 1880, 495,367 gross tons, as against approximately 20,000 for wood.[2] At this latter date, however, only about one-fifth of the iron ships building were sail.

II

The Age of Reform, characterized by its innumerable boards and commissions of inquiry and spates of legislation, in providing direct and indirect impulses to the further development of commercial shipping during the fifties, laid the foundations of the great age of sail. Most of the reforms were generated before the repeal of the Navigation Laws, and during a period that saw the decline of protectionism and a new era of shipping and trade expansion throughout the world. The new era may be said to have opened with the termination of the East India Company's monopoly in 1834, and was followed by the establishment of the new eastern doorway of Hong Kong in 1842, the discovery of gold in California in 1848 and in Australia in 1851. In 1834, too—it is worthwhile noting—the underwriters of Lloyds, with the support of progressive merchant shipowners reconstituted Lloyd's Register of Shipping to regulate, for the special benefit of sail, the proper survey and classification of British merchant ships.[3]

The rehabilitation and education of British manpower in the merchant marine was also not without effect in re-creating and energizing a service that was to win the heart of Joseph Conrad. The debates on the Navigation Laws provide ample evidence as to the lamentable training of British masters and chief mates, for which posts no examination of any kind was required.[4] The act of 1835 which established a Seamen's Register had stimulated some improvement, but consular reports in reply to an official circular of 1843 revealed on the whole a shocking lack of navigational competence, and led to the Merchant Seamen Act of 1844, as well as the organization of the Marine Department of the Board of Trade in 1847.

But the most important reform was the alteration of the Tonnage Laws in

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[1] *The Mirror of the Sea* (New York, 1932), pp. 47–8.

[2] See Sir Lowthian Bell, *The Iron Trade of the United Kingdom* (London, 1886), originally a statement submitted to the Royal Commission on the Depression of Trade, pp. 43–4; cf. White, *Manual of Naval Architecture*, pp. 364–5.

[3] General British ship registration begins with the act of 1786, 'An Act for the Further Increase and Encouragement of Shipping and Navigation' (26 Geo. III, c. 60), whereby registration for 'all ships having a deck, or being of the Burther of fifteen tons, or upwards' was instituted.

[4] Hansard, 3rd ser. LXV (1842), 764–5; William Page (ed.), *Commerce and Industry, A Historical Review of the Economic Conditions of the British Empire*... (London, 1919), I, 213–14; see also, J. R. McCulloch, *A Dictionary, Practical, Theoretical and Historical of Commerce and Commercial Navigation* (1847 ed.) p. 1439.

1836. The new regulation[1] which was designed to prevent tax evasion by simplifying and thereby clarifying methods of measurement, forced a radical improvement in ships' proportions.[2] Hitherto, the merchant ship had been shackled not only by taboo and convention and the natural limitations of wood construction,[3] but by governmental restrictions which encouraged the building of deep, sluggish, flat-bottomed, flat-sided vessels, 'built by the mile and served out by the yard'. The system of tonnage measurement which encouraged depth at the expense of beam was based on the Tonnage Act of 1773[4] and was intended to provide, for entry in the ship's register, a figure which represented the total cargo-carrying capacity of the ship. This figure was obtained by a curious formula in which only length and breadth measurements were used, depth being assumed as half the breadth,

$$\frac{\text{Length}-\frac{3}{5}\,\text{Breadth}\times\text{Breadth}\times\frac{1}{2}\,\text{Breadth}}{94}.$$[5]

Consequently, since taxes in terms of port and light dues were paid only on a registered artificial tonnage estimate based on length and beam, considerable economies were to be obtained by deepening the hold, without increasing the breadth. This often meant a dangerously unstable vessel, that required when high in the water a considerable ballast to prevent capsizing. The adoption of the convoy system during the greater part of the Napoleonic Wars had tended to popularize and standardize this 'lumbering' carrier, for the requirements of war made heavy demands on capacity, and convoys necessarily put limitations on speed. Not till the wars were over, was the 'barbarous system' as G. R. Porter called it, subject to attack and eventually condemned as primarily responsible for the most unsightly and unmanageable ships in Europe.[6]

Unfortunately, it was not obligatory under the new law for every ship to be re-measured after 1836, and such merchant ship-builders as stood to lose continued under the old system until the Merchant Shipping Act of 1854 provided for final revision.[7] Had the Tonnage Law of 1836 been compulsory, and its terms enforced, the 'flying clipper', as a breed, might well have made its start in Britain rather than the United States. As it happened, although lengths were somewhat increased after 1836, the same general type of ship continued to be built until the new measurement law came into force in 1855. Under

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[1] 5 & 6 Wm. IV, *c.* 56. The method of calculating tonnage under this rule was complicated. Three depth measurements had to be taken—at the bow, amidships and stern; also two beam measurements at different places on the imaginary vertical line at each of these depths. Measurements were taken in feet and tenths of a foot, and the final divisor was 3,500. This figure was chosen to bring the average tonnage of all British vessels to the same figure as the average tonnage measured by the old rule, thus avoiding a major upset in the statistics.

[2] In his *Marine Dictionary* (London, 1830), Dr William Burney wrote: 'It appears from the general construction of merchant ships, that more attention is paid to evade the tax on tonnage than to their sailing well with the wind in different directions; and that if the real tonnage of ships were taken, an alteration would soon be made in the construction for the better' (p. 569).

[3] The wooden sailing ship was limited to a length of about 300 ft.

[4] 13 Geo. III, c. 74.

[5] The United States passed a very similar law in 1789, which remained on the statute books until the end of the Civil War. See Henry Hall, *Report on the Ship-Building Industry of the United States 1882* (Washington, 1884), pp. 64–5. In 1819, by an Act of 59 Geo. III, c. 5, the British Tonnage Law of 1773 was re-enacted, but with modifications allowing for the deduction of engine and boiler space in the case of steam vessels.

[6] *Progress of the Nation* (1847 ed.) pp. 402, 466.

[7] 17 and 18 Victoria, c. 104.

Moorsom's Law, as it was frequently called (after George Moorsom, an eminent naval architect who was secretary to an unfruitful tonnage commission of 1849) tonnage measurement was now based on the actual and rigorously investigated cubic capacity of the hull, the unit of 100 cubit feet being one ton register. Hence, a vessel measuring 100,000 cubic feet internal capacity was registered as 1,000 tons.[1] Thenceforward, until 1864, when the American 'old measurement' was at last repealed, British shipowners possessed an economic advantage that had been theoretically theirs after 1836.[2]

The fashioning of sailing hulls always invited a good deal of individual craftsmanship and originality,[3] and now that they were no longer inhibited by taxation penalties on breadth, owners became interested not only in producing clippers for particular trades, but in cutting times over particular routes, and in beating their foreign rivals to a record. From the mid-1850's, when British vessels began to win races from Foochow to London against the fastest American clippers, the restoration of British sailing ship ascendancy was assured. The Civil War in the next decade merely converted a gentlemanly retreat into a rout.

Meanwhile, the Thames and the Clyde continued to produce the standard cargo vessel of around 1,200 tons gross, replete with the latest labour-saving hand and steam appliances such as winches for working yards, sails and anchors. Chain cables were coming into general use, to be followed eventually by steel wire rope and steel spars and yards, all of which were to make possible the more economical working of a vessel by a comparatively small crew.[4] Britain could not build wooden ships at such low costs as the United States, but she held a partially compensating advantage in cheaper labour and equipment, and probably in the more enduring hulls, when they happened to be built of the precious English oak, or more occasionally of teak. But cheaper timber was not neglected. The fast-developing immigrant trade to Australia was based on softwood sailing ships, built frequently of New Brunswick larch; and softwood carried the bulk of the Australian wool trade against the competition of steam well into the 1880's.

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[1] For sailing vessels there was only one registered tonnage—gross. Actually, a 1,000 ton registered ship could ordinarily carry 2,000 tons at 50 cubic feet per ton. (See Clark, *op. cit.* p. 315.) Under this new rule, however, the machinery spaces of *steam vessels* might be deducted, thus providing for a net or due-paying tonnage. The Merchant Shipping Act of 1867 by allowing the improved living space for seamen to be deducted from the gross, initiated a system of net tonnage for sailing ships.

[2] Although trammelled by measurement follies until 1864 the Americans had pressed ahead regardless of taxation penalties and limited cargo capacity. In long-distant trades like tea, where speed was the prime consideration, inept tonnage laws did not necessarily destroy the profit-making capacities of the streamlined vessel with her fine entrance, shallower hull and long, clean run. In the California and China trades time meant money, and in the 1850's the great new American clippers made astonishing records for speed; at the time, no steamer could equal their best runs in 24 hrs. (See Henry Hall, *op. cit.* p. 74; W. S. Lindsay, *History of Merchant Shipping*, 4 vols. (London, 1876) III, 288–91.) The fastest 24 hr. run was probably 465 miles, on 12 December 1854, and the highest speed 21 knots on 18 June 1856, both records being made in the 'roaring 'forties'. According to Carl C. Cutler, one American clipper averaged 372 miles a day for 10 days in 1854 on the Melbourne-Liverpool run, at an average speed of 15½ knots. *Five Hundred Sailing Records of American Built Ships* (Marine Historical Association, Mystic, Connecticut, 1951), p. 109.

[3] Cf. Sir William B. Forwood, *Reminiscences of a Liverpool Shipowner 1850–1920* (Liverpool, 1920) p. 110. In ch. x he discusses in some detail the building of an East Indiaman (pp. 106–10).

[4] See Sir Charles C. McLeod and A. W. Kirkaldy, *The Trade, Commerce and Shipping of the Empire* (London, 1924), p. 30. In 1863, the *Seaforth*, an iron ship of 1,200 tons, built for the Calcutta trade in Liverpool, was fitted with steel lower masts, topmasts, topsail yards and bowsprit, and with standing rigging of steel wire rope. She was the first vessel to have steel spars and rigging, although the tea clippers subsequently adopted them. Clark, *op. cit.* pp. 322–3; see also, Forwood, *op. cit.* p. 12.

During the 1850's the cost of building wooden sailing ships, especially softwood, decreased slightly.[1] Wood, iron, copper, hemp, sail cloth—all these articles continued to be cheaper after 1849, with the result that new ships built in the 1850's could be employed upon lower terms than those built in past and more expensive times.[2] Similarly, although the practice never became fashionable, the increased application of diagonal planking, which involved less bulky frames, saved a great deal of timber without prejudice to the strength of the ship. And further economies obtained by the use of iron knees, straps and other such structural units were coming into general practice.

Beginning with the Crimean War sailing ships were produced (and also bought) on such a scale that the supply not merely overtook, but eventually exceeded the demand.[3] Between 1858–9 (at a time when John Elder and Alfred Holt were completing their experiments with the compound engine) and 1870–4, the construction of new merchant vessels for home and colonial use doubled in terms of tonnage, while exports of shipping to foreigners showed an even greater relative increase.[4] The total registered United Kingdom tonnage

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[1] About 1850 a ship built largely of softwood, e.g. larch, might cost £17–18 a ton, but these possessed a life average of only 7–10 years. A Blackwall frigate built of teak on oak frames and fitted for Far Eastern trades might cost from £22–25 per ton, with a Lloyds rating of 12 years' life A 1. The best iron ships cost £25 to £30, although in times of depression like the 1850's, the price of iron ships which were expensive to lay-up, dropped as low as £15. (See David R. MacGregor, *The Tea Clippers* (London, 1952), pp. 66–9. According to Henry Hall, in 1825 a 300-ton ship cost from $75–80 a ton in the U.S., from $90–100 a ton in Canada, and from $100–110 a ton in England. In 1847, a large ship, first class in every respect, cost from $75 to $80 a ton in the U.S., against $87 to $90 in England. *Report on the Ship-Building Industry of the United States*, p. 87.

[2] Porter, *Progress of the Nation* (1851 ed.), pp. 389–90.

[3] Lindsay, *A History of Merchant Shipping*, III, 355; see also William Scholz, *Die Stellung der Segelschiffahrt zur Weltwirtschaft und Technik* (Jena, 1910), p. 55, for statistics of growth.

Thanks to the repeal of the Navigation Laws, American wooden ships continued to be bought and chartered by British shipowners, a process that was probably accelerated by the financial depression of 1857–9. Not until the time of the Civil War, however, did the tide finally turn in favour of the British shipbuilder; between the years 1861 and 1865 about 800,000 tons of American shipping valued at forty million dollars were sold abroad. Through war casualties and sales, some 40% of the American sea-going tonnage was lost. Clark, *op. cit.* p. 292. For a summary of the causes of the eight years' depression beginning in the United States in 1857, when according to Maine shipbuilders, 'the bottom dropped out of things', see Henry Hall, *op. cit.* pp. 92–3. On the English shipping recession of 1857–8, see Lindsay, *op. cit.* III, 358, 361, 380.

[4] *Statistical Tables and Charts relating to British and Foreign Trade and Industry, 1854–1908*; [Cd. 4954] *Accounts and Papers*, CII (1909), p. 104.

Statement showing the tonnage of vessels (exclusive of war vessels for the British Navy) built in the U.K., 1858–1908, distinguishing the tonnage of merchant vessels built for home and the colonies, and for foreigners, respectively.

Annual average for years 1858–9

Net tonnage for home and colonies			Net tonnage for foreigners			Net tonnage total		
Sailing	Steam	Total	Sailing	Steam	Total	Sailing	Steam	Total
151,449	45,576	197,025	2,460	25,164	27,624	153,909	70,740	224,649

Annual average for years 1870–4

Net tonnage for home and colonies			Net tonnage for foreigners			Net tonnage total		
Sailing	Steam	Total	Sailing	Steam	Total	Sailing	Steam	Total
100,878	295,502	396,380	3,962	63,167	67,129	104,840	358,669	463,509

grew from an annual average in 1855–9 of 4,519,192 to 5,728,819 in 1870–4, while the total for British possessions abroad gained half a million.[1] But of greater significance was the increase in commercial sail tonnage. In 1850 the registered sailing tonnage for the United Kingdom had been approximately 3,400,000, with 168,000 steam; by 1860 the total was 4,204,000 with 454,000 steam; by 1870 the sailing total had reached over 4½ million, with steam, based on the evolving compound engine, ascending to 1,113,000.[2]

Although the steam ship had successfully wedged its way into the overseas trade, mainly by carrying passengers and subsidized mails, the evolving sailing ship of the 1860's and 1870's—faster than its predecessors, with double the space for cargo in proportion to tonnage, and manned and navigated by about one-third the number of men[3]—retained on broad oceans a predominance almost as marked as that of the screw steamer in the coastal and neighbouring waters of Europe. Even when the opening of the Suez Canal in 1869 reduced the longest gap between coaling stations from some 5,000 to 2,000 miles, although the China trade was eventually lost, most of the traffic to the Bay of Bengal, the East Indies, South America or Australia, was still conducted by the sailing ship which continued to be the more economical carrier for the greatly expanding trade in bulky commodities, such as iron and coal, the jute and rice of India and Burma, the wool of Australia, the nitrate fertilizer of Chile and the wheat of California.[4]

This grasp on long distance trade preserves was strengthened in consequence of the new and progressively widening knowledge of oceanography. In the life of sail, storms were less to be feared than calms, and unlike the steamship which could, generally speaking, travel the shortest distance between two points, the sailing ship route varied greatly according to seasonal winds and currents. Until the middle of the nineteenth century there was no systematic research on ocean currents, winds and weather. Traditional lore, occasionally modified in the light of sporadic efforts at relating personal experience, was often confused and contradictory, and on the whole contributed little to shorten sailing journeys over accustomed routes. James Cook's voyages in the eighteenth century laid a foundation for further advances in hydrographical research, but the first systematic approach to the study of oceanography began with the diligent enquiries of Major James Rennell which led to the publication about 1830 of his collected wind and current charts.[5] His work was continued and amplified by Lieut. M. F. Maury, U.S.N., the first of whose statistical compilations was published in 1850. By putting down on a chart the tracks of many hundreds of vessels on the same voyage, but at different times, in different years, and during all seasons, and by noting along each track the winds and currents daily encountered, Maury was able to generalize on combined experience, and provide for the sailing captains a series of sign posts pointing to the best route in any particular month or even week. Such a chart exhibited not only the tracks of vessels, but observations on the character of winds and currents along the way, the temperature of the ocean, and the effect of magnetic influences on the needle. '...thus the young mariner, instead of groping his way along until the lights of experience should come to him by the slow teachings of the dearest of all schools, would here find at once that he had already the experience of a thousand navigators to guide him on his voyage.'[1]

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[1] *Ibid.* p. 114.

[2] Tables showing the Progress of Merchant Shipping in the United Kingdom and the Principal Maritime Countries (Cd. 7,033] Accounts and Papers, LX (1913), 58, 60. Scholz figures for 1860–70 are slightly lower all round (p. 61).

[3] Lindsay, *op. cit.* III, 420.

[4] See John Glover, 'Tonnage Statistics of the Decade 1860–70', *Journal of the Statistical Society of London*, XXXV (1872), 220. Table I on p. 221 shows the tremendous increase between 1860 and 1870 in the carriage of bulky articles such as coal, iron and steel, grain, rice, wool, wood, sugar, wine, spirits, pyrites, guano and petroleum.

A French commission which investigated the condition of the merchant marine in 1862 was in general agreement that for coastal traffic and passenger services, steam would continue to hold an advantage; for the long distance voyage 'la voile seule reste pratique'. (See *Enquête faite sur la marine marchande en 1862*, 3 vols. (1863–5) I, 355, 374, 516, 613; quoted in Ambroise Colin, *La Navigation Commerciale au XIX^e Siècle* (Paris, 1901), pp. 45–7.

[5] See Sir Clements R. Markham, *Major James Rennell and the Rise of Modern English Geography* (London, 1895), pp. 146–56, 169–70.

The immediate results were startling enough. In the early 1850's, the average passage to the equator was shortened by ten days; an American master calculating on the new system covered the stretch from Baltimore to the equator in twenty-four days; the previous average had been forty-one. The journey from England to Australia—over 11,000 miles—around the Cape of Good Hope was ordinarily about 125 days; Maury was soon able to reduce this time to about ninety-two; similarly with the return voyage around Cape Horn, he worked out tracks which took advantage of the prevailing west winds in the South Atlantic and Indian oceans, and demonstrated that a ring of westerly winds girdled the earth between 40° and 50°. In consequence, since the distance to Australia via the Suez was not much shorter, favourable westerlies providing speeds of between 12 and 14 knots enabled the fast clipper of the 1860's and 1870's to compete both ways on practically even *times* with the steamship.[2]

In practice, the steamship did not ordinarily attempt to challenge commercial sail on long distance trade routes which would have necessitated enormous space for coal stowage. On the other hand, the increasing range of steam following on the successful application of the compound engine in the late 1860's and the increase of bunkering depots soon established the limitations of fast sail, and emphasized the importance of safeguarding the long-distance trades by sacrificing too-fine lines for greater cargo capacity. The fast clipper might make four voyages to three of the larger ship, but in total carried no more cargo. She might obtain slightly higher rates; yet she had to meet the expenses of the extra voyage. In the face of the more economical, *higher-pressured* marine engine, sail could only survive as the capacious long-distance carrier of cheap, bulky cargoes such as wool, nitrate, grain, oil and coal.

III

Obviously, the term 'high pressure' has been variously applied according to each generation that experimented with steam. Generally speaking, in the 1830's the ordinary steam pressure in marine boilers averaged 5 lb.; in the 1840's, 10 lb., and in the 1850's, with the introduction of the tubular boiler, (patented by Lord Dundonald in 1848) 20 lb. The first major advance from this elementary stage towards 50 and 60 lb. pressure came in the 1860's with the gradual adoption of compound cylinders, accompanied by circular boilers of sufficient stoutness to take the increased pressure and surface condensers that allowed the continual use of fresh instead of sediment-bearing salt water.[1] The introduction of the compound engine marked a notable advance in marine engineering; by passing steam from the first cylinder (where the initial pressure was great) to a second cylinder of greater bore, where there was naturally less pressure per unit of area, the amount of power from a given amount of steam was not doubled, but it was considerably increased. A reduction of almost 60 per cent fuel consumption was effected, which made possible by 1870 a profitable tea trade to China. Had the compound engine been perfected twenty years earlier, there would still have been sailing ships on the ocean, but there would have been no great age of sail as represented by the sixties and seventies; and again, had John Napier and his fellow engineers of Glasgow been able to produce in 1870 pressures of 125 lb. or more to the square inch instead of 60 or thereabouts, then and then only would the completion of the Suez Canal have marked the major turning-point in the life of sail.[2]

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[1] Introduction to the first edition (1855), included in *The Physical Geography of the Sea* (London, 1860), p. iii. See also, Maury's major work on tracks and sailing directions, *Explanations and Sailing Directions to Accompany the Wind and Current Charts*... (7th ed. Philadelphia, 1855).

[2] *Ibid.* p. iv; Scholz, *op. cit.* pp. 107, 114–5; and Colin, *op. cit.* pp. 34–5.

As it was, the opening of 'that dirty ditch' plus the threat of the compound engine gave a temporary check to sailing ship construction. For two or three years after 1869 the building of the larger ships almost stopped.[3] In 1871, the number of new sailing vessels was 'unprecedently small', whereas the increase in the number of steamers was 'almost double that of any preceding year'.[4] Most of the builders of sail were badly frightened. Ten years earlier the opening of the Suez Canal would have made little difference to their prospects; few low-pressure cargo-carrying steamers could have been profitably employed even if the saving had been as much as 5,000 miles on the route to Bombay. But by 1869 the compound engine had made a striking advance in the economical use of steam as applied to cargo-carrying. Ships burning 30 to 40 tons of coal a day to carry 1,400 tons cargo on a long journey had been superseded by faster vessels burning only 14 tons of coal and carrying 2,000 tons cargo.[5] 'Our present experience shows us', declared the Vice-President of the Institution of Naval Architects in April, 1870,

> that, with a vessel of 2,000 tons, builders' measurement, giving an average of nine knots, and burning 14 tons per day, coal may be carried for the round voyage of 12,000 miles the distance to and from Bombay, and leave space to carry 1,600 tons of cargo out or 2,000 tons home....If this be so, we may regard as the natural consequence of the opening of the Canal, that the whole or at least the greater portion of the traffic between Bombay and England, will be lost to sailing vessels and appropriated by steam.[6]

The improved steamer was now capable of travelling non-stop to West Africa, or even as far as Mauritius.

Yet the check to sailing ship construction, while ominous for the future was only temporary. As a result of the growing commerce in cheap bulk commodities the predominance of sail was extended by more than a decade after 1870. The industrial supremacy of Great Britain in the nineteenth century had been founded on a few major commodities—coal, iron, cotton and woollen goods—and these still contributed to a rapidly expanding export trade. But it was coal more than any other article that brought a new lease of life to the commercial sailing ship in the latter days of her ascendancy.[1] As the cheapest coal carrier, as well as the cheapest warehouse in the world,[2] the sailing ship became the chief replenisher of overseas coaling bases and depots. In addition, coal as ballast meant lower outgowing freight rates, and cheaper return cargoes of bulk food and raw materials. With the contraction of markets of north-west Europe, both Cardiff and Newcastle found compensation in the export of coal to the Pacific ports of South America; within the next few years, Brazil and Uruguay were to be tied to the 'tramp' sailing ship, as were also, in gradually diminishing degrees until the end of the 1880's, south Australia and the Pacific Islands.[3] The out-freights of saltpetre from the west coast of South America were carried almost exclusively in sailing ships which brought coal from Wales or Northumberland; and similarly the returning sailing ships from the Indian rice ports usually went out with coal to one or other of the great bunkering bases—Singapore or Hong Kong—on the route from Suez to the Far East.[4]

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[1] See Nathaniel Barnaby, *Naval Development in the Century* (London, 1904), p. 124; Pollard, *op. cit.* pp. 313–14; C. N. Robinson, *The British Fleet* (London, 1894), p. 302; John Bourne, *op. cit.* pp. 246–60, and by the same author, *A Treatise on the Steam Engine*, preface to the 10th ed. (London, 1872).

[2] Despite unreliable and chronically troublesome boilers, pressures of 100 lb. were obtainable in the 1870's, but on the whole there was found to be little or no economy in fuel consumption once a pressure of 70 or 75 lb. had been exceeded. 'In fact, the compound or double-expansion engine has relapsed into the condition of the old single-expansion one.' A. C. Kirk, 'On the Triple Expansion Engines of the *S.S. Aberdeen*', *Trans. Inst. Naval Arch.* XXIII (1882), 34.

[3] See MacGregor, *The Tea Clippers*, p. 193.

[4] E. A. V. Angier, *Fifty Years Freights 1869–1919* (London, 1920), p. 8.

[5] Samuda, *op. cit.* p. 2.

[6] *Ibid.* pp. 2–3.

The tremendous growth of the grain trade of the New World after 1874 provided another powerful stimulus to sail. The American Civil War had practically destroyed the American mercantile marine, and following the opening of the wheat lands of the American West, the process of 'dumping' large consignments in Europe became almost the monopoly of a growing fleet of British sail. British and Canadian clippers built for the Australian gold rush and wool trade were rapidly pressed into service to carry western grain, along with guano, around the Horn to England, returning in due course with coal for San Francisco.[5] In 1882, 550 sailing vessels, mainly British, were engaged in carrying grain from the west coast of the United States to Europe.[6]

Similarly, the Australian trade remained throughout the 1880's almost exclusively sail. In 1874 Australia's grain export amounted to 907,500 tons; in 1888 it was 2,315,700. Grain and wool proved to be an admirable return freight for immigrants.[7] Curiously enough, the opening of the Suez Canal had no immediate effect on the south-east Asia rice trade, and until the Suez Company began to lower their canal rates in the 1880's, the sailing ship maintained a near-monopoly of the rice ports of Saigon, Bangkok, and Rangoon, Bassein and Akyab in Burma.[8]

As in the 1850's, depression favoured sail as against steam. In the long trades, sailing ships found more favour than steamers and obtained good rates. Even on the China tea run clippers like Cutty Sark could compete at £3. 10*s*. a ton.[1] 'From the rice ports, according to Angier Bros.' Freight Report for 8 February 1873, '75*s*. sail, 92*s*. 6*d*. steam, U.K., 5*s*. extra, Cont., can still be done'.[2] Throughout 1874 and 1875 there were variations of the same theme. 'East Indian business has been dull for steam... for sailers the demand is comparatively brisk.' Indeed, for many years after 1874, East India business remained extremely dull for steam, and there began an all-round decline in freight traffic and rates which, in spite of fluctuations, especially in the rice trade, lasted until 1884.[3] There was a temporary revival in 1881, but Angier's Freight Report for 31 December 1884 noted that:

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[1] See W. S. Jevons, *The Coal Question* (3rd ed., London, 1906), pp. 253–76.

[2] Samuda, *op. cit.* p. 9.

[3] Scholz, *op. cit.* p. 59. The decline of the Australian coal trade was largely the result of mining developments on the east coast of Australia.

[4] *Ibid.* p. 85.

[5] R. A. Rydell, *Cape Horn to the Pacific, The Rise and Decline of an Ocean Highway* (University of California and Cambridge (1952), p. 147. See also, Basil Lubbock, *The Colonial Clippers* (Boston, 1921); and F. W. Wallace, *Wooden Ships and Iron Men: The Story of the Square-Rigged Merchant Marine of British North America* (Boston, 1937).

[6] C. E. Fayle, *A Short History of the World's Shipping Industry* (London, 1933), p. 245.

[7] Scholz, *op. cit.* p. 79.

[8] *Ibid.* pp. 74, 79–80.

> In almost every trade, the lowest points reached during the year at which steamers have been chartered are lower than have ever before been accepted.... This state of affairs was brought about by the large over-production of tonnage during the three previous years, fostered by reckless credit given by the banks and builders, and over-speculation by irresponsible and inexperienced owners. The universal contraction of trade also aggravated the effect of the above causes.[4]

The 'excessive and ever-increasing supply of tonnage' was no doubt a general contributing factor in the depression which smote the freight trade in the 1870's; in a time of shrinking business and competitive rates, the sailing ships with lower operating costs could afford, in days of bad port facilities, to wait for a cargo, rather than 'lay-up'. In this way, they were in a position to compete over normal steamship routes, and taking advantage of depression prices, their owners were able, by building as well as buying, to add to their numbers.[5] In spite of the increased use of steam in ocean navigation, the contraction of the world's supply of shipping in a period of business depression, following the temporary glut, gave an enormous stimulus to new sail.

The spectacular revival after 1874 coincided significantly with the building of a new and larger type of sailing ship—full-bottomed, yet fast, and often specially designed for a particular trade. The 'composite' wood and iron ship of the late 1860's faded out of the picture to be replaced by the stately and loftily-rigged iron cargo vessel, with steel masts and rigging and the latest labour-saving machinery which halved the number of seamen and consequently reduced the costs of operation. Moreover, the increased use of steam tugs for towage[6] continued to encourage the building of ships of even greater cargo capacity. This advance which became very marked with the increasing use of iron in the

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[1] Freights from China, 1872:

		£	*s.*	*d.*
At Hankow in May–June	P. & O. *S.S. Deccan*	7	0	0
	other steamers	5	6	0
	clippers	3	10	0
At Shanghai on 13 June	steamers	3	10	0
	clippers *Cutty Sark* and *Lahloo*	3	10	0
	clipper *Chinaman* (for New York)	4	0	0

(I am indebted to David R. MacGregor for these extracts from 'The London and China Telegraph'.)

[2] *Fifty Years Freights 1869–1919*, p. 15.

[3] *Ibid.* pp. 19, 20, 30, 34, 37.

[4] *Ibid.* p. 61.

[5] There were a few instances of steamers being converted to sail; in 1878, according to Lubbock, a number of Cunard steamers were so refitted. See *Last of the Windjammers*, p. 239; Pollard, *op. cit.* p. 304.

[6] In his *Reminiscences of a Liverpool Shipowner 1850–1920*, William Forwood describes how the tug *Retriever* set an early commercial example, by towing the famous *Red Jacket* out of Liverpool Harbour in 1857. *Red Jacket* was 2,006 tons, 260 ft. length, and 44 ft. beam.

1870's, was considerably augmented at the beginning of the eighties by the acceptance of steel. The typical 800 or 1,000 tonner of 1850 became the 2,000 tonner of 1880–5. Although by 1880 the total registered steam tonnage was estimated at 2,700,000 as compared with 3,850,000 for sail,[1] the immense increase in carrying capacity helped for a few years yet to balance the advantage of the scheduled and more rapid steamer turn-about.[2] Not until 1885 with the general acceptance of the high-pressure, triple-expansion engine did the firm of Angier & Co. begin to calculate three sail tons as the equivalent of one steamer ton.[3]

In short, the improved sailing ship, with double the space for cargo in proportion to tonnage was bound to hold its place as the principal overseas carrier, until an economical high-pressure engine enabled the steamship to compete in terms of annual carrying power. Consequently, the really portentous event in the history of ocean transport came not with the paddle-wheel, the iron hull or the screw propeller, but with the final mastery of high pressures in the marine engine.

IV

By the end of the 1860's, with the perfection of the compound engine, the objective was in sight; higher pressures had become the means of winning vital economies in fuel consumption and of adding cargo space. Only one more step was necessary before the cargo steamer should decisively defeat the sailing ship as a competitive carrier, and this last step could only be accomplished with the aid of the metallurgist. In the face of the paddle-wheel, the screw, the low pressure and even the compound engine, the sailing ship had managed to hold her supremacy as a cargo carrier. But in the 1870's the lead had become precarious as Bessemer's and Siemens' plants began to produce steel that would enable boiler plates and boiler tubes to withstand pressures of 100, 150 and even 200 lb. per square inch. Yet once again, development lagged far behind discovery. Stronger boilers, more powerful furnaces and more efficient condensers were achievements that were generally applicable long after the discovery of the processes that made them possible.

Progress was slow because it depended so largely on the advance of rolling mill techniques. Not until the middle of the nineteenth century were the processes of stamping, pressing and cutting, sufficiently advanced, and the machine tools sufficiently perfected to permit malleable iron to replace castings on any scale.[4] Angle irons and structural forms like shaped girders or beams came much later in the 1860's. It was a long time, moreover, before it became clear that the greater tensile strength and durability of steel were worth the higher prices that had to be paid for steel plates.[1] Some of the earlier steel plates had proved to be dangerously brittle, and for a good many years engineers were inclined to be suspicious of a material which they regarded as 'treacherous and unreliable for boilers'.[2]

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[1] Tables showing the Progress of Merchant Shipping in the United Kingdom and the Principal Maritime Countries (Cd. 7,033), *Accounts and Papers*, LX (1913), 58, 60.

[2] Owing to the space occupied by machinery and fuel the carrying capacity of a steamer before the introduction of the triple expansion engine was at least 16% less than that of a sailing ship of similar dimensions. Because British cargo ships, steam and sail, traded frequently between foreign ports, it is impossible on the basis of British statistics to estimate the actual tonnage annually carried by the mercantile marine.

[3] Professor Colin considered that such a 3 to 1 calculation was reasonable after 1875. See *La Navigation Commerciale au XIXe Siècle* (1901), pp. 4–5. It is not possible to be any more precise than Angier & Co., and I should myself prefer a date after 1885, when the introduction of the triple expansion engine not only cut down enormously on the amount of fuel to be carried on long distance journeys, but permitted a speed which on a general average allowed three times as many voyages as the sailing ships could perform within a given space of time.

[4] T. S. Ashton, *The Industrial Revolution, 1760–1830* (Oxford, 1948), p. 103.

A large part of the responsibility for this delay, however, must be regarded as man-made. '...the one ruling idea that purchasers cling to,' declared an eminent naval architect in 1870, 'is "price"—"lowest price"—at which anyone can offer to throw together materials and labour to produce the article sought.'[3] Since there was no shortage of cheaper wrought iron plates, there was no need to chivvy the manufacturer to press ahead with expensive steels, because there was no demand for change. As late as 1885, steel plates of the quality required by Lloyds cost about 46 per cent more than did ordinary wrought iron,[4] which alone helps to explain why shipbuilders clung to wrought iron. Moreover, the mills that leased Bessemer's or Siemens' patents were busy filling the insatiable demand for steel rails, tyres, axles and connecting rods in Britain, the United States and throughout Europe. It was not until 1884, long after the Bessemer and Siemens' mills were in production that steel for shipbuilding reached a price as low as that for the best quality iron,[5] by which time the output of open-hearth steel was about half a million tons.[6] Similarly, not until about 1878 was steel turned into effective cylindrical boilers, and connected with the corrugated forced-draught furnace, thus permitting a 30 per cent increase in steam pressures. By 1881, further increases in pressure which the stronger steel boiler permitted not only reduced the consumption of fuel for a given power by more than 60 per cent but paved the way for the introduction of the triple-expansion engine.[7]

The final stage in the evolution of the high-pressure engine and the first stage in the annihilation of sail had been reached. In 1881, the *S.S. Aberdeen*, built to the order of Messrs George Thompson & Co. (whose celebrated Aberdeen White Star Line included some of the swiftest clippers in the Australian trade) and fitted with triple-expansion engines, was launched from Napier's yard in Glasgow.[8] With 4,000 tons of cargo and coal, she left Plymouth on 7 April, and after bunkering at the Cape reached Melbourne within 42 days under steam pressure of 125 lb.[9] In December 1884, Angier's *Freight and Steam Shipping Review* announced the attainment of the 150 mark:

> The triple expansion engine with greatly improved boilers working at 130 to 150 lb. pressure, has virtually this year been established as a commercial as well

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[1] In the year 1880 iron plates averaged £6. 5*s*. a ton, and steel plates £11. 14*s*. 6*d*. a ton. (Lowthian Bell, *op. cit.* p. 52.)

[2] Richard Sennett, *The Marine Steam Engine* (London, 1882), p. 144.

[3] J. D'A. Samuda, 'On the Influence of the Suez Canal on Ocean Navigation', *Trans. Inst. Naval Arch.* XI (1870), 3–4.

[4] J. H. Clapham, *An Economic History of Modern Britain* (Cambridge, 1932), II, 63.

[5] Angier, *Fifty Years of Freights*, Report of 31 December 1884, p. 62.

[6] J. S. Jeans, *The Iron Trade of Great Britain* (London, 1906), pp. 4–5.

[7] See Sennett, *The Marine Steam Engine* (1882) especially pp. 200–3.

[8] A. C. Kirk, 'On the Triple Expansion Engines of the *S.S. Aberdeen*', *Trans. Inst. Naval Arch.* XXIII (1882), 33–7.

[9] 'Nobody, until Mr Kirk led the way with this boiler, as fitted to the *Aberdeen*, has had the courage to use steam of 125 lbs. at sea in a boiler of ordinary marine type....' Mr John Scott (who helped to introduce the compound engine in 1858), in the course of a discussion on the comparative merits of triple expansion and two-cylinder compound engines, at the Institution of Naval Architects, 29 March 1882 (*Trans*...XXIII (1882), 45); see also E. C. Smith, *A Short History of Naval and Marine Engineering* (Cambridge, 1938), pp. 244–5.

> as an engineering success, and bids fair to supersede the ordinary double cylinder compound engine. The results obtained in the former being a considerable saving of fuel, wear and tear, and even space. Additional experience and experiments have enabled engineers to cope more effectively with one of their greatest enemies—corrosion in boilers.[1]

One year later, they were able to declare that in consequence of the past year's experience, 'the old type of compound engines are no longer made'.[2] In 1887 the 150 pressure mark was passed, and shortly after, the 200 mark—a pressure per square inch requiring only a fraction more than a pound of coal per horsepower per hour. The old low pressure engine had required ten.

The adaptation of the high pressure triple expansion engine to the ocean carrier marked the end of an epoch—the epoch of a trading empire that for the greater part of the nineteenth century had conducted the bulk of its commercial business by sail.

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[1] Angier, *op. cit.* Report of 31 December 1884, p. 62.

[2] *Ibid.* Report of 31 December 1885, p. 67.

FIRE INSURANCE AND THE CAPITAL COEFFICIENT IN GREAT BRITAIN 1866–1952[1]

By K. MAYWALD

I. Reinstituting the use of insurance valuation

ONE cannot attempt to reintroduce the use of insurance valuations in investigations into the development of national wealth without first acknowledging the early users of this source of information. As the paper read before the Statistical Society in 1877 by C. Walford relates, the use of insurance valuations in estimates of national wealth was a regular feature in writings on the subject up to the late 1860's.[2] With the abolition of the stamp duty on fire insurance in 1870 this very interesting series of insured property values, which had been available since 1783 was discontinued. Thereafter, the attention of economic research has been focussed on other sources.

The complete abandonment of this source in subsequent works was, however, an unnecessary impoverishment of already scant sources of information. The Metropolitan Fire Brigade Act of 1865 imposed on the fire insurance offices transacting business in the Metropolitan area the obligation to contribute *pro rata* to the value of property they insured in support of the Brigade. Thus, shortly before the series of all insured property was discontinued a new series of information on insured values was introduced which continues without interruption to the present time.[3]

The use of values derived from records of fire insurance transactions in evaluating the National Wealth is not without its complications. But if in interpreting the figures we keep in mind the special limitations of such data, the analysis may provide very useful supplementary information. The difference between values recorded by fire insurance and the national total of all assets used by the economy at a given moment depends mainly on the following circumstances: (*a*) the specific conditions of valuation for insurance purposes, (*b*) the insurance-mindedness of the owners of assets, and (*c*) the weight of the uninsurable assets in the total of national wealth.

The aggregate of values recorded by insurance transactions is the outcome of a continuous process of valuation of the stock of assets in use by the economy, reflecting—usually with some delay—the actual market values of assets, the time-lag being most apparent in times of major changes in the price level. A tendency to undervalue insured assets may result from two independently working motives: the owner of assets tends to economize his expenditure on insurance, seldom exaggerates the value (in good faith), and may prefer to take part of the risk on himself whenever his doubts are raised in the marginal region of valuation. The fire insurance offices on the other hand are bound to follow a cautious policy by discouraging over-insurance. This downward bias of both sides in insurance transactions manifests itself also in the form of a time-lag in the adjustment of insured values to changes in the price level. On the other hand, where a creditor is considered, his interest will always work rather in the opposite direction.

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[1] I wish to thank Mr J. J. McGibbon for his constant help during the preparation of this paper.

[2] C. Walford, 'Fires and Fire Insurance Considered under their Historical, Financial, Statistical and National Aspects', *J. Statistical Soc.* XL (1877), 347–432.

[3] *London Statistics* and *Abstracts of London Statistics*. Thanks to the kind assistance of the Clerk of the London County Council, the series has been made available for this paper up to 1952.

But whatever the peculiarities of insurance valuation may be in an individual case or even in the national aggregates in certain historical situations, its predominant features produce an aggregate of values readily adaptable to the requirements of long-range economic analysis. The suitability of insurance valuation for use in long-term measurement depends, after all, on the stability of attitudes and conventions prevailing in the fire insurance business. Where or when the condition of stability is given, there the insurance valuation is bound to produce information relevant at least for a dynamic analysis of the capital coefficient in the economy.

II. THE INSURED VALUES IN THE METROPOLIS COMPARED WITH ASSESSMENTS

The information on insured values in the Metropolis stood up satisfactorily to the preliminary tests. Table 1 indicates a very high degree of stability in the conventions relevant for fire insurance valuation. The ratio of insured values to assessments for tax purposes fluctuate very closely about a central value, apart from periods which are notorious for their disorganization of all economic valuations. But even after such major disturbances, the ratios are soon turning towards a new central value embodying something like an agreed centre of gravity amidst all uncertainties. The behaviour of these ratios in times of great upheaval, no less than their stability during the comparatively complacent first four decades undoubtedly invites our confidence in the story they can tell to the student of long-term problems.

Between 1871 and 1913 the ratio of insured values to gross annual values assessed for the Inhabited House Duty fluctuated mostly within the range of 22·0–23·0 and that to the rateable value within 27·5–25·5. Thereafter the two valuations parted. Between 1913 and 1920 the insured values had increased by more than one-half, though they remained far from the contemporary price situation. But they already overstepped the level of values permanently tenable in the light of subsequent price development. The early 1920's were evidently years of readjustment; new assets were just about sufficient to outbalance downward adjustments of the many cases of overvaluation during the preceding years of very high prices. On the other hand, the assessments remained practically frozen up to the first revaluation year. Thus 1920 registers the record ratio of 39·8 to Schedule A assessments and 43·5 to rateable value. Each revaluation year brings the series a step nearer to their earlier relationship, up to the new turn of the tide after the outbreak of the Second World War.

Thus what evidence there is points not only to a fair stability in the process of insurance valuation but also to a sensitivity of these values adequate to the requirements of long-range analysis.

The insured value of assets in the Metropolitan area provides a sample representing about one-fifth of all property recorded in Income Tax assessments. A national total or series of insured values similar to that for London would certainly be very welcome, as would any breakdown of the London figures, especially one distinguishing stocks-in-trade. For the present, however, all that seems accessible is information on premiums received and claims paid or out-

Table 1. *Insured value of property in the Metropolis and assessments for taxation*

	Insured value				Insured value		
		Ratio to				Ratio to	
Year	£m.	Schedule A gross income	Rateable value	Year	£m.	Schedule A gross Income	Rateable value
1	2	3	4	1	2	3	4
1866	364	—	—	1910	1,096	22·3	24·4
1867	411	—	—	1911	1,115	22·9	25·0
1868	426	—	—	1912	1,133	23·1	25·3
1869	441	—	—	1913	1,141	23·2	25·3
1870	461	—	24·7	1914	—	—	—
1871	471	20·6	23·6	1915	1,182	23·9	26·1
1872	489	21·0	24·1	1916	1,224	24·7	27·1
1873	517	22·0	25·2	1917	1,294	26·0	28·6
1874	540	22·4	25·9	1918	1,412	28·5	31·0
1875	564	23·0	26·5	1919	1,653	33·3	36·3
1876	580	22·0	24·7	1920	1,985	39·8	43·5
1877	604	22·3	25·6	1921	2,056	37·7	42·5
1878	606	21·7	25·2	1922	2,008	36·3	41·3
1879	625	22·0	25·4	1923	2,019	36·0	41·1
1880	657	22·5	26·1	1924	2,041	36·1	41·0
1881	678	21·7	24·3	1925	2,090	33·8	41·5
1882	697	21·8	24·8	1926	2,142	31·1	38·5
1883	725	22·2	25·3	1927	2,189	29·7	39·1
1884	744	22·6	25·5	1928	2,234	29·4	39·3
1885	749	22·4	25·3	1929	2,265	29·9	39·4
1886	751	22·0	24·1	1930	2,285	29·4	39·1
1887	763	22·0	24·6	1931	2,301	26·0	36·5
1888	768	21·9	24·5	1932	2,288	25·4	36·1
1889	786	22·4	24·9	1933	2,274	25·2	35·5
1890	806	22·6	25·4	1934	2,281	25·3	35·3
1891	819	22·5	24·8	1935	2,308	25·4	35·4
1892	822	22·3	24·7	1936	2,339	24·0	36·2
1893	839	22·5	25·0	1937	2,377	23·9	36·6
1894	846	22·6	25·0	1938	2,419	24·1	36·9
1895	859	22·7	25·1	1939	2,393	23·5	36·0
1896	880	22·4	24·6	1940	2,393	24·2	35·6
1897	896	22·5	24·8	1941	2,250	23·2	34·0
1898	910	22·5	24·9	1942	2,279	25·4	37·2
1899	933	22·8	25·2	1943	2,342	27·3	40·0
1900	963	23·1	25·6	1944	2,476	28·9	42·4
1901	975	22·3	24·6	1945	2,528	29·6	43·3
1902	991	22·3	24·7	1946	2,734	32.2	47·6
1903	1,010	22·4	24·9	1947	3,077	35·8	52·8
1904	1,023	22·5	24·9	1948	3,404	38·8	60·0
1905	1,032	22·4	24·8	1949	3,664	41·4	63·4
1906	1,040	21·7	24·0	1950	3,972	43·4	66·7
1907	1,055	21·8	24·1	1951	4,287	46·1	71·0
1908	1,072	21·9	24·2	1952	4,615	49·6	75·5
1909	1,083	22·1	24·3				

standing, published by the Board of Trade and the Office of the Industrial Assurance Commissioner since 1913.

The fatal drawback of this information is that it includes business abroad. Though the data are net of re-insurance and this is responsible for a larger part of business overseas, changes in the relationship to branches working abroad (e.g. transforming them to subsidiaries) might introduce disturbing factors of considerable weight in the data. Thus this information could only be used indirectly as an aid in checking the grossing-up of our partial information. Even this it can do only to a limited extent, primarily by a comparison of its behaviour with that of the estimate.

III. Estimate of insurable assets in Great Britain

The term insurable assets is used deliberately to remind readers that the estimated values are not necessarily identical with the values actually insured in Great Britain throughout the whole period covered by Table 2. This distinction between the value of insurable assets and values actually insured is more significant in the earlier decades when there was a greater proportion of non-insurance of property.

The lower insurance-mindedness was most frequent among owners of the smallest properties. According to a testimony from the 1860's, little insurance protection was provided for properties of value less than £300.[1] This seems to be reinforced by further information, stating that there were only 1,389,000 fire policies in force in Great Britain in 1861.[2] Since the number of houses chargeable with the inhabited house duty—and presumably insured—was 556,000, there remain only 833,000 policies to cover all other property.

Since information on non-chargeable buildings is not available before 1874–5, the breakdown for this year has been converted to the 1861–2 level by the ratio of gross annual value of houses assessed under Schedule A in 1861–2 to that for 1874–5. The available 833,000 policies were just sufficient to insure all properties with annual value above £10 and to leave a small fraction for buildings under £10. Some 29,000 policies remain unallocated, which is not enough to provide insurance cover for 15 per cent of the number of all properties classified in this group. In terms of annual values, however, this uninsured property could represent only 9·5 per cent of all property assessed for the Inhabited House Duty (i.e. inclusive non-chargeable property).

The fact that smaller uninsured properties were relatively less numerous in the Metropolis is of some consequence for our estimate. Property of annual value under £10 accounted for only £278,000 out of the total assessment of £24,078,000; if the Metropolitan small properties are insured according to their share of available policies, the remaining uninsured properties in this area can be taken as just 1 per cent by annual value.

In view of differences between the composition of insurable properties in the Metropolis and in the rest of Great Britain on the one hand and the known association between non-insuring and size of property, there is the need to distinguish insurable assets from insured value. The almost complete insurance coverage of property in the Metropolis does not make the Metropolitan data unrepresentative and less suitable for our purposes. The almost full insurance coverage in the Metropolis is extended by one estimate to all property in Great Britain. The otherwise imminent disturbance from the progressively improving insurance-mindedness of small property owners has been reduced to an insignificant level, and the terminological distinction was the sole price paid for it: 'Insurable assets' has had to be used instead of 'Insured values'. The wider coverage of our estimates of insurable assets comes out satisfactorily in the earliest years when they can be compared with the actual insured values on which stamp duty was paid:

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[1] Walford, *op. cit.* p. 413.

[2] *Ibid.* p. 412.

	Insured values (£m.)	Insurable assets (£m.)
1866	1,276	1,339
1867	1,342	1,512
1868	1,388	1,565
1869	1,499	1,623

Thus a major source of under-insurance can only come from an under-valuation of the insured assets (and apart from a fraction the size of which is indicated by the share of small insured properties in the Metropolis), not from their non-insurance.

The first cost value and adjustment for under-insurance

Much of the economic thinking about the capital coefficient is in terms of the first cost value of assets, this having obvious methodological advantages. There is, however, no necessary agreement between the first cost value of assets and the value derived from insurance transactions, so we must examine the possible differences to ensure a proper interpretation of our estimates. The difference between the first cost value of all assets exposed to the risk of fire and the actual insured values may be due to two things. First, the insured values are influenced by the diminishing value of assets in the later stages of their useful life. Secondly, some of the destroyable assets may not be insured at all or may be under-insured.

Insurance experts are better equipped to give an answer to this problem than the outsider. The following attempt to evaluate the possible gaps in the estimates is intended as a set of questions put in the form of a tentative estimate, presented in the two columns, of Table 3, one of which gives the 'imputed minimum of the first cost value' and the other is 'imputed maximum'.

The omission of a special row which would give the value of uninsured destroyable assets (or their under-insurance) poses the first question to the insurance experts: Would they agree that under-insurance can be taken to be more or less compensated by over-insurance? Or, if there is some discrepancy remaining on this account, is it adequately provided for within the 'imputed first cost value'? Is it nearer to the minimum or to the maximum level?

The minimum imputed first cost value assumes that the insured values are about 75 per cent of the first cost value. The maximum assumes the difference to be about one-third of the first cost.

These two guesses make use of an additional assumption, namely, that the pattern of insured assets is 2 units of buildings to 1 unit of other assets. This is supposed to be typical for our economy not only in the last decades, but already in the earliest years, of our survey. The predominance of this ratio even at the beginning of the period has been disclosed in a convincing way by the effects of a reduction of stamp duty on policies insuring inventories in 1864. The subsequent fall in revenue from stamps on fire-insurance policies showed that more

Table 2. *Insurable assets and national income in Great Britain*

Year	Metropolis per cent from Schedule A houses	Insurable assets		Year	Metropolis per cent from Schedule A houses	Insurable assets	
		£m.	Ratio to National Income			£m.	Ratio to National Income
1	2	3	4	1	2	3	4
1866	—	1,339	—	1910	22·6	4,845	2·34
1867	—	1,512	—	1911	22·4	4,981	2·36
1868	—	1,565	—	1912	22·2	5,108	2·28
1869	—	1,623	—	1913	22·0	5,179	2·23
1870	—	1,694	1·86	1914	21·9	—	—
1871	27·2	1,731	1·83	1915	21·8	5,429	2·15
1872	26·9	1,815	1·83	1916	21·7	5,641	1·90
1873	26·6	1,941	1·79	1917	21·6	5,980	1·69
1874	26·4	2,047	1·89	1918	21·6	6,552	1·54
1875	26·3	2,141	2·05	1919	21·4	7,710	1·40
1876	26·2	2,213	2·09	1920	21·9	9,068	1·55
1877	26·1	2,313	2·15	1921	22·1	9,320	1·75
1878	25·9	2,343	2·18	1922	21·1	9,526	2·14
1879	25·7	2,434	2·26	1923	19·5	10,333	2·40
1880	25·8	2,548	2·39	1924	18·8	10,880	2·51
1881	26·1	2,595	2·39	1925	19·4	10,757	2·42
1882	26·4	2,635	2·37	1926	20·3	10,536	2·38
1883	26·4	2,749	2·40	1927	20·8	10,519	2·34
1884	26·3	2,829	2·43	1928	20·9	10,709	2·41
1885	26·3	2,853	2·46	1929	20·7	10,953	2·43
1886	26·3	2,856	2·40	1930	20·6	11,114	2·50
1887	26·3	2,899	2·44	1931	20·5	11,210	2·57
1888	26·9	2,853	2·31	1932	20·4	11,210	2·62
1889	26·8	2,938	2·28	1933	20·1	11,308	2·56
1890	26·1	3,094	2·29	1934	19·7	11,561	2·58
1891	26·1	3,141	2·31	1935	29·5	11,420	2·52
1892	25·9	3,161	2·30	1936	19·3	12,119	2·47
1893	25·7	3,267	2·40	1937	19·2	12,413	2·46
1894	25·7	3,331	2·38	1938	19·0	12,765	2·47
1895	25·3	3,395	2·34	1939	18·7	12,804	2·31
1896	25·3	3,479	2·42	1940	18·5	12,942	2·05
1897	25·1	3,576	2·40	1941	17·9	12,598	1·79
1898	24·6	3,695	2·36	1942	17·2	13,289	1·73
1899	24·2	3,862	2·37	1943	16·5	14,211	1·68
1900	24·1	3,994	2·32	1944	16·4	15,256	1·81
1901	24·1	4,041	2·33	1945	16·1	15,673	1·88
1902	24·0	4,136	2·39	1946	16·0	17,141	2·12
1903	23·6	4,285	2·50	1947	15·8	19,512	2·18
1904	23·2	4,417	2·50	1948	15·7	21,723	2·24
1905	23·1	4,460	2·44	1949	15·7	23,323	2·27
1906	23·2	4,489	2·34	1950	15·7	25,235	2·32
1907	23·2	4,540	2·25	1951	15·7	27,271	2·30
1908	23·1	4,630	2·32	1952	15·7	29,358	2·28
1909	22·9	4,731	2·32				

Col. 2. The share of the Metropolis in total gross annual income from houses assessed under Schedule A in Great Britain is shown as a three-years' moving average taken from information available in the Reports from the Commissioners of H.M. Inland Revenue up to 1913–14. The publication of data from the Metropolis was discontinued in 1914. From 1914 to 1925 we have continued this series with the gross rental assessed for local rates and published in Local Taxation Returns for England and Wales, and later in the Annual Reports of the Ministry of Health; the only adjustment necessary being a deduction of a fixed amount, this being the difference established by comparison of the gross rental with the assessments under Schedule A in the last three

than one-third of the values then insured qualified for the reduced rate of duty.[1]

For an aggregate with a steady growth of assets, and such a pattern as the insured values, the imputed minimum difference, due to depreciation, will be given by a weighted average of two sub-groups, buildings, with a weight of 2 units and an accrued depreciation of 20 per cent, and other assets with a shorter useful life, with a depreciation of one-third. Similarly, the imputed maximum difference is derived from a weighted average of two sub-groups, in which buildings are assumed to have depreciated by one-quarter of their first cost value, and the other assets by 45 per cent. A higher accumulated depreciation for buildings seemed unlikely having regard to the age structure produced by a constant rate of growth and allowing for the insured values lagging behind diminished values. On the other hand, the depreciation assumed for the other assets goes practically to the limit which is typical for aggregates of assets with no major growth, but with a salvage value of 10 per cent. Stocks-in-trade which do not depreciate are assumed to be under-insured by a fraction corresponding to the accrued depreciation of the 'other assets'.

The suggested maximum for the imputed first cost value has an analogy in the frequently expressed opinion in the sixties that fire insurance covered about two-thirds of the total value of assets.[2] It seems probable that the insurance experts of the 1860's have had in mind the full reproduction costs of the assets in case of their destruction, not the actual market value as they stood, with all the deficiencies accumulated during the preceding years of service and usually covered by appropriations for depreciation.

Assets outside the reach of fire insurance

The purpose of the survey of assets outside the reach of fire insurance in Table 3 in Appendix 1 (p. 101) is an auxiliary one. It is a sketchy supplement, intended only as a background to the measurements based on fire insurance information. Notes to the table disclose all its shortcomings. Its purpose is to provide a survey of the probable order of magnitude of the value of all man-made assets, without embarking—in this paper—on the more ambitious task of a complete and thoroughly consistent computation of all other assets.

Using the supplementary figures from Appendix 1, we can introduce here the

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years (1911–12, 1913–14). This adjustment agreed with the direct information in the breakdown of Schedule A for the Metropolis which became available again in 1926–7. This direct information from the Board of Inland Revenue covers the succeeding years up to 1941–2. Since then recourse had to be made again to the valuation for rating purposes, 'net annual value' published in the London Statistics, the changes of which have been applied on the last known assessment for Schedule A.

Col. 3. Insurable Assets in Great Britain results from a combination of col. 2 with the insured values in col. 2 of Table 1. From 1866 to 1870, in which no breakdown of Schedule A for the Metropolis is available, the information from 1871—the nearest available—has been used.

Col. 4. Ratio to National Income is ratio of col. 3 to estimates of National Income in A. R. Prest, 'National Income of the United Kingdom', *Econ. J.* LVIII (March, 1948), 59. Prest's figures have been raised to fit the full-employment level and reduced from U.K. to Great Britain estimates by ratio of gross amount of income under the review of the Inland Revenue Dept.

[1] *Reports from Commissioners*, Parliamentary Papers (1870), XX, 284.

[2] Walford, in his paper (p. 415), quotes testimonies indicating that house property in England and Wales was insured for about two-thirds of its value. According to Manchester police returns, quoted also by Walford (p. 375), the insured value of buildings was about two-thirds, whereas less than one-half of stocks was protected by insurance.

outline of the approximate value of all real assets and compare it with Stamp's estimates (in £m.):

		Our estimates (including land)		
			Imputed first costs	
	Stamp's estimates	Net values	Minimum	Maximum
1914	11,112 ± 1510	9,258	11,300	12,171
1928	18,175 ± 1350	16,372	19,941	21,727
1935	21,500 ± 1800	16,874	21,761	23,735

Our insured values supplemented by non-insurable assets compare well with Stamp's figures. In the light of this the auxiliary survey in Appendix 1 can be of some use in interpolating and extending Stamp's estimates.[1]

IV. RESULTS COMPARED WITH OTHER INFORMATION

If the capital coefficient and especially changes in the numerator are to be interpreted properly, account must be taken of two other factors, namely, changes in the intensity of employment and changes in the price level. This can be done either by direct adjustment of the series before the calculation of the capital coefficient, or later by comparison of the development of the relevant series with an unadjusted, or partly adjusted, capital coefficient.

An allowance for changes in the intensity of employment has been made before the calculation of the capital coefficient by raising the national income to its full-employment level, on the assumption that available information on unemployment is acceptable as the best expression of changes in 'normal' or full economic activity.

Numerous qualifications can be made to this simplification, but the inaccuracies involved in such a straightforward adjustment are smaller than those involved in using the unadjusted capital coefficient. It goes without saying that this adjustment is of greatest significance for the early 1930's, when unemployment fluctuated near 17 per cent. Without this adjustment the capital coefficient would rise in these years by about 10 per cent compared with the late 1920's and by some 15 per cent against years with just 2 per cent unemployment.

The capital coefficient is a ratio of two components, each of which has a different relationship to the development of prices. Apart from the well-known exceptions, the National Income is a full-blooded expression of contemporary price conditions. The valuation of the stock of assets is, in all the available sources of information, a heterogeneous aggregate whose parts are influenced in one way or other by their price history. Though the valuation in insurance transactions takes into account price changes deemed to be of a more permanent consequence, it does so with some delay. Any attempt to penetrate into this process of valuation must, therefore be a rough and risky approximation. This makes it necessary to handle the concept in such a way as to limit the risks of unsatisfactory deflation.

In interpreting the aggregate of insured values we have to face the fact that the influence of price development on its components is a fairly complex process, which cannot be reduced to any simple and consistently applicable formula. The range of possible discrepancies between fire-insurance valuation and current prices can be delimited by two extreme cases. In the one, all owners of insurable assets can be assumed to be fully price-conscious, and thus the aggregate of insured values taken as being in complete agreement with the contemporary price situation. The other extreme is where owners completely ignore price fluctuations and leave values in their fire policies on the level of prices prevailing in the year in which the assets were first insured (i.e. after construction or purchase). Creditors' insistence on ample insurance works for rigidity against downward revaluation. Less conspicuous changes in replacement costs escape the attention of many owners and thus contribute towards maintaining earlier valuations unchanged in either direction, whereas in years of suddenly rising prices some groups of owners may become highly price-conscious and even tend to exaggerate their revaluations.

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[1] The impact of price fluctuations is discussed below in Section IV, on p. 100 and in App. 2.

Under these conditions the construction of further indicators of the possible accumulative influences of past prices seemed a suitable approach to our problem. Table 4 in Appendix 2 (p. 104) shows four such auxiliary indicators of the 'tension from past prices' which can be expected to deform any aggregate of values accumulated by purchases or revaluations within an agreed period.

To express our reserve towards these inevitably imperfect tools, they are kept apart and presented so that the reader may draw his own conclusion by comparing their movements with those of the capital coefficient unadjusted for price changes, using Table 2 and Table 4 or Fig. 2.

The long-term development of the capital coefficient measured by insured values is already apparent from Fig. 1, where the National Income and insurable assets are plotted on a network of two scales, which put £2·3 of assets as the counterpart of £1 of income. Fig. 2 brings this relationship under a microscope, which despite its clumsy lenses does show where an explanation of the fluctuations of the unadjusted capital coefficient can be found. It compares the capital coefficient from insured values with two of our auxiliary indicators of the 'tension from past prices': Indicator *A* gives the extent of the deforming tension from past prices which would have to be expected in the aggregate of insured values in the extreme case of owners completely ignoring later price changes. Indicator *B* illustrates the implications of the opposite assumption giving the tension from past prices which would accumulate if all owners revalued their insured assets regularly in five year periods, each of the years within such a period having an equal share in the aggregate.

Finally, it must be remembered that these references to the National Income as a complete expression of the contemporary price situation need qualification in one respect. The Rent Restriction Acts keep one important component below the general level of prices and thus diminish the visible National Income. In consequence, the calculated capital coefficients are slightly higher than they would otherwise be. To give an example from more recent years, in 1950 the gross income from houses was £578,000,000 against £540,000,000 in 1939. An allowance for the impact of this item alone would increase the National Income by some 5 per cent and reduce the capital coefficient accordingly. The wider disorganization of economic values after the Second World War is reflected in the first major disharmony of the curves in Fig. 2, most apparent in the last years.

V. Summary of observations

Space does not allow an extensive discussion of results, so we shall deal here with only a few points:

(1) For the methodology of measuring long-term changes in the capital coefficient a comparison of the whole continuous series, possibly in their original

form, appears of advantage. Whereas the disturbance due to under-employment of the economy can be neutralized by converting income figures to their full-employment equivalent, the deformation caused by price fluctuations is a more intricate problem. The technical risks of deflating can be advantageously reduced by confining adjustment to the asset series, which can be converted by the same index to its current price equivalent instead of its constant price level. This economy in the use of analytical tools has an additional advantage in that the possibility of systematic bias in the deflator can be neutralized, to a large extent, by its use in reflating. A tool constructed on the lines of our tentative indicator of the tension of past price in the valuation of fixed assets might be of help in such tasks.

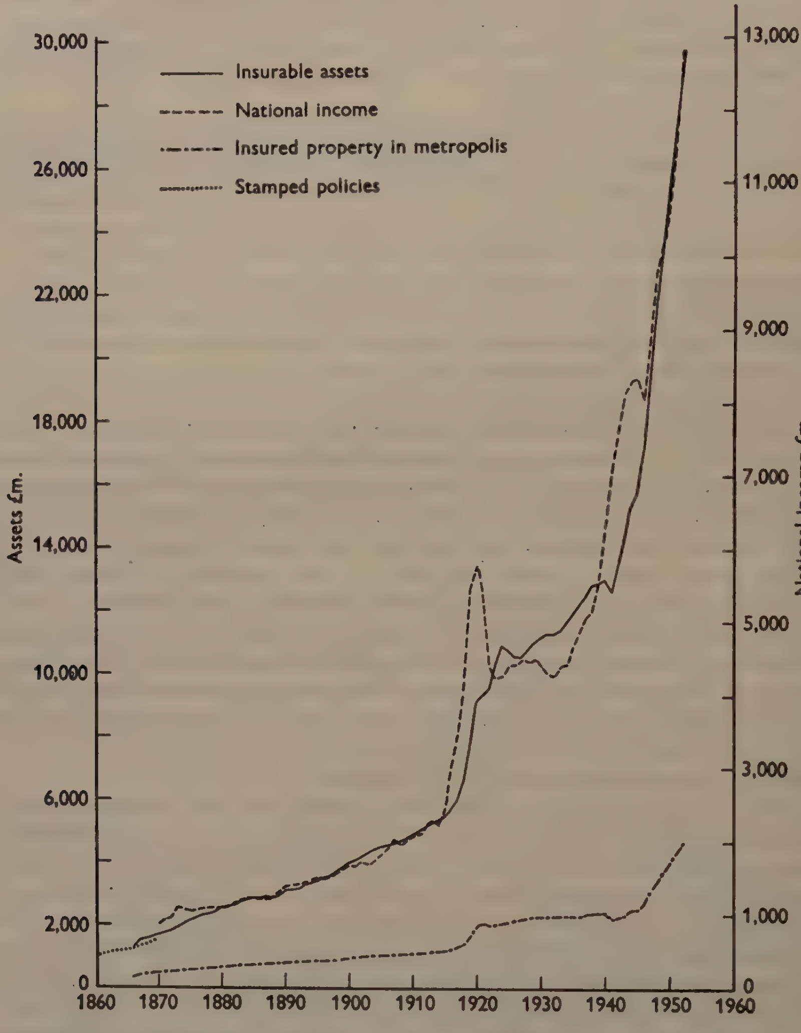

Fig. 1. Insurable assets and National Income in Great Britain, 1860–1952.

(2) Fluctuations in either direction of the capital coefficient calculated from insured assets are of comparatively short duration and have a range which

suggests that they could not have been produced by changes in the physical volume of the stock of assets. A one per cent increase of the capital coefficient caused by an increase in the stock of assets would require additional net savings

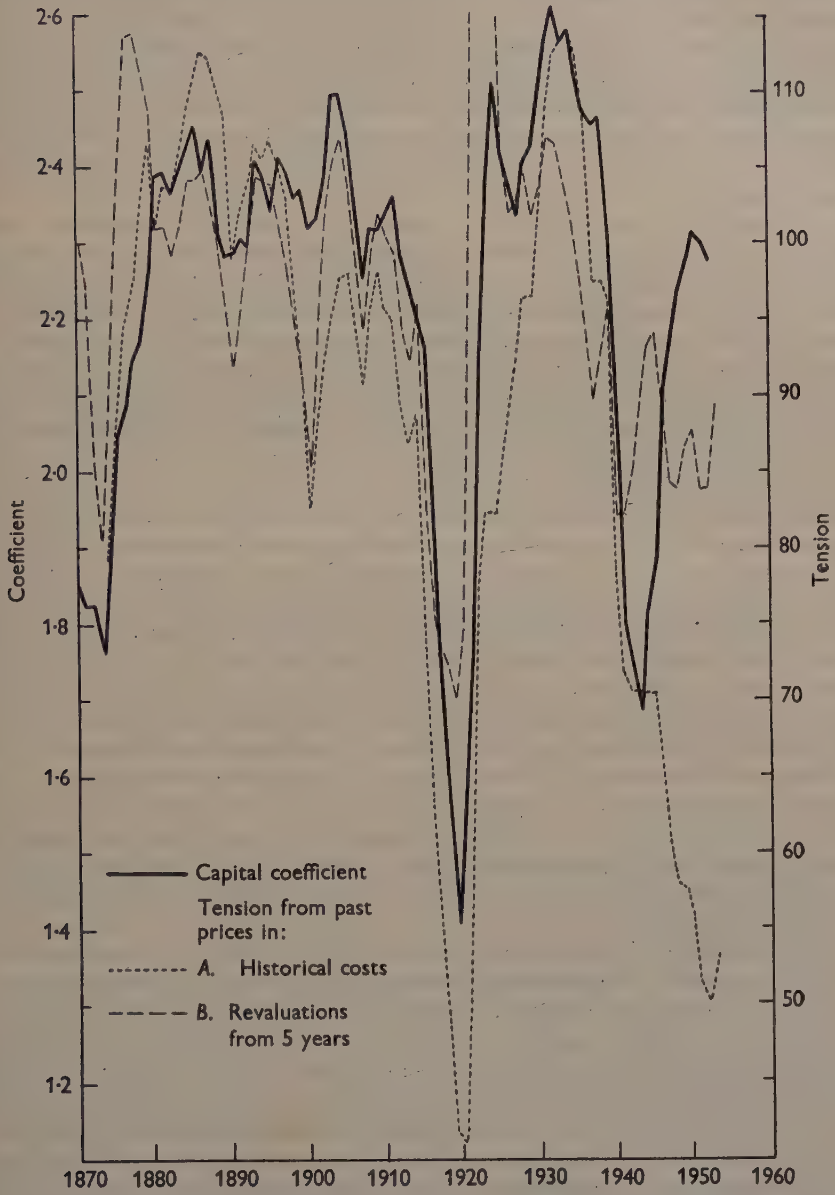

Fig. 2. Capital coefficient of insurable assets and tension from past prices, 1870–1952.

of some 2·3 per cent of the National Income. By 'additional' is meant here the savings necessary to finance the new man-made assets (both insurable and other) required by the increase of National Income. There are no traces of a consistently working trend in the development of this capital coefficient neither in an upward nor in a downward direction; a strong tendency to stability seems to prevail throughout.

(3) The comparison of our indicators for the tension from past prices with the capital coefficient of insured values shows that: (*a*) The turning points of the capital coefficient agree with the turning points of the indicators of tension; (*b*) the movements of tension accumulated from shorter periods are in better agreement with those of the capital coefficient in years of rising prices. But in years of falling prices the tension from longer periods comes nearer to the recorded capital coefficient. Thus the expectation mentioned above of a certain lag in the price-consciousness of owners of insurable assets seems to be confirmed by our observation.

(4) The block of assets outside the reach of fire-insurance transactions, taken as a whole, does not differ so markedly from the insurable assets as to counteract the tendency to stability of the above capital coefficient. The downward tendency of the other assets surveyed in Table 3 would disappear if all the groups of assets included were brought to a more comparable basis. A revaluation of assets in railways, harbours, water, gas and Local Government would increase the contribution of all the other assets to the overall capital coefficient from the 1930 level of 0·77 to their 1910 figure 0·99, measured in terms of the minimum value estimates of imputed first cost.

(5) The stability of the capital coefficient from insurable assets (in Table 3), has an interesting complement in the stability of the ratio of insured values to assessments of the gross annual value of buildings in the Metropolis (in Table 1). The central value 2·3 of the capital coefficient has its counterpart in the 22·5 ratio of insured values to gross income, maintained up to the time of the first general dislocation in the system of economic values by the First World War. It reflects the stability of the share of incomes from buildings in the total income. Though the buildings other than dwellings have their share, the predominance of the latter is a commonplace. In fact if the influence of dwellings on standards for industrial, commercial and administration buildings, schools, transport, etc. is taken into consideration, it is not difficult to visualize that there must be an important connecting link between regularities in consumers' behaviour and those in measurements of the overall capital coefficient. Thus the suggestion emerges here that the Douglas production function must be thriving on having one of its ultimate roots in the regularity of consumers' behaviour formulated so long ago by Engels.

(6) The information on insured values emerges from this examination as a source capable of substantially enlarging the scanty statistical material available for economic research. The usefulness of this information would be increased if all assets insured in Great Britain were included in the regular returns deposited by the Assurance Companies with the Board of Trade. A simple classification of insured assets, say, distinguishing stocks-in-trade from buildings, or dwellings from business premises, would enhance the use and value of such statistics. These investigations would require very little additional work from those who are already engaged in the preparation of the current issues of the Assurance Returns. There are few points in the economic organization where equally valuable information could be made so readily available.

In conclusion, it may not be out of place to emphasize that the overall stability of the capital coefficient mirrored in insurance valuations is derived from a complex of components, some of which have undoubtedly quite divergent development. The large weight of capital directly related to consumers' income (like dwellings and their accessories provided by Local Authorities, or stocks-in-trade) obscures the changes in capital coefficients composed of assets engaged in production. However, from what is known about the major changes in the social environment and their apparently upward influence on the capital coefficient (shorter working week, holidays, or decreasing use of night shifts) the inference can be drawn that the technological improvements (including the organizational), if considered alone, must have had a remarkable capital saving tendency.

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APPENDIX I

A SUPPLEMENTARY SURVEY OF ASSETS OUTSIDE THE REACH OF FIRE INSURANCE

The other assets in Table 3 as they are now represented, do include some assets which are already included in the value of insurable assets (e.g. buildings owned by harbour undertakings) or again items not belonging to the total of man-made assets (e.g. land owned by railways). On the other hand there are undoubtedly groups of assets not represented in the survey, e.g. if the value of standing timber and investments in reafforestation were included, the total would be raised in 1938 by £94,000,000, if valued at current prices, or by £116,000,000, if taken at historically given costs.

Some additional items are listed in the group below, comprising those assets which could not be classified as containing primarily man-made assets, and which have not been included already in the estimate of insurable assets (in £1,000,000):

	1914	1935
1. Agricultural land	1,155±50	975±75
2. Farmers' capital	340±40	475±40
3. Mines, quarries, etc.	179±18	240
4. Urban sites	280±60	550±80
Total	1,954±168	2,240±195

The first three items are the estimates of Sir Josiah Stamp.[1] The value of urban sites had to be improvised. The lower limits entered into the survey to represent the value of urban sites are actually the annual gross incomes from houses as assessed under Schedule A. This short-cut estimate of the lower limit assumes that the ratio of the total value of buildings to their site value is on the level of one year's purchase. It corresponds to the lower limits expressed by valuers quoted by Stamp.[2] According to D. Murray, the value of buildings in Glasgow could be put at 8 to 15 times the site value and that of residences at 10 to 20 times the site value. Other valuers have put the ratio at 10 or under. Accepting the latter ratio as a possible higher limit gives us the second figures in the survey.

The ratio used can be compared with information from the accounts of public utilities during the interwar decades. Accounts of Electricity Supply Undertakings in Great Britain show a capital expenditure accumulated up to 1930–1 (1921–2) on land of £7·9 m. and on buildings used in generation of £35·5 m. (£16·6 m); similarly £1·7 m. (£0·4 m.) for land and £8·3 m. (£2·1 m.) for buildings in distribution. On the other hand the Metropolitan Water Board

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[1] Sir Josiah Stamp, *The National Capital and other Statistical Studies* (1937), pp. 31, 234; *British Incomes and Property* (1916), p. 404.

[2] *British Incomes, op cit.* p. 345.

Table 3. *Insurable assets, their first cost value and other assets,* 1850–1938

1	1850 2 (£m.)	1860 3 (£m.)	1870 4 (£m.)	1880 5 (£m.)	1890 6 (£m,)	1900 7 (£m.)	1910 8 (£m.)	1914 9 (£m.)	1920 10 (£m.)	1930 11 (£m.)	1938 12 (£m.)
(1) Insurable assets:											
(*a*) Insured values	800	1,028	1,694	2,548	3,094	3,994	4,845	5,179	9,068	11,114	12,765
(*b*) Imputed first cost: (i) Minimum	1,067	1,371	2,259	3,397	4,125	5,325	6,460	6,905	12,091	14,819	17,020
(ii) Maximum	1,200	1,542	2,541	3,822	4,641	5,991	7,268	7,769	13,602	16,671	19,148
(2) Shipping											
(*a*) Depreciated value	26	42	71	108	122	127	155	168	274	355	234
(*b*) First cost value	63	91	132	197	242	245	304	334	467	713	670
(3) Harbours, docks and canals:											
(*b*) First cost value (=(*a*))	36	40	50	60	90	109	127	130	198	227	231
(4) Railways and tramways											
(*b*) First cost value (=(*a*))	228	328	503	700	872	1,155	1,345	1,360	1,094	1,152	1,221
(5) Water supply:											
(*a*) Depreciated value		—	—	32	44	65	141	145	184	222	244
(*b*) First cost value	—	—	—	48	66	98	211	217	310	387	446
(6) Gas:											
(*a*) Depreciated value	—	—	—	32	40	68	88	91	74	96	126
(*b*) First cost value	—	—	—	49	59	101	132	136	136	178	228
(7) Electricity:											
(*a*) Depreciated value	—	—	—	—	—	15	60	72	58	217	349
(*b*) First cost value	—	—	—	—	—	26	90	108	128	371	665
(8) Local government, non-trading services:											
(*a*) Loans outstanding (=(*b*))	—	—	—	77	112	190	244	259	252	395	529
(9) Total of available items:											
(*a*) 'Net' values	1,090	1,438	2,318	3,557	4,374	5,723	7,005	7,404	11,202	13,778	15,699
(*b*) First cost values: (i) Minimum	1,394	1,830	2,944	4,528	5,566	7,249	8,913	9,449	14,676	18,242	21,010
(ii) Maximum	1,527	2,001	3,226	4,954	6,084	7,917	9,724	10,317	16,187	20,094	23,138
(10) Capital coefficients from available:											
(*a*) Net values	—	—	2·54	3·34	3·24	3·33	3·39	3·29	1·92	3·10	3·04
(*b*) Imputed first cost values											
(i) At minimum level	—	—	3·22	4·25	4·12	4·22	4·31	4·20	2·52	4·11	4·07
(ii) At maximum level	—	—	3·53	4·65	4·50	4·60	4·70	4·59	2·77	4·53	4·48

at the end of 1938 (in 1920) had a capital expenditure on land of just 4 per cent (4·4 per cent) out of the total accumulated since its formation. Or, going over to the residential types of buildings, the total costs of buildings in the accounts of voluntary hospitals during the 1930's is found to be between 12 to 16 times the cost of site, apart from cases of apparent reconstruction.

The man-made assets in Table 3 and the additional account of assets on p. 101 taken together give totals of domestic real assets which can now be compared with Stamp's estimates for 1914, 1928 and 1935. From Stamp's survey of assets in 1914 the items called: Schedule C National Debt (£1,148 m.), railways outside the United Kingdom (£655 m.), Indian, colonial and foreign securities (£621 m.), coupons (£383 m.) and income accruing abroad

Notes to Table 3.

(1) Insurable Assets: (*a*) Insured Values are assumed to be net values (net of depreciation). (*b*) Imputed First Costs are explained on pp. 93–5.

(2) Shipping: Both series are from material prepared by the author for his present work on Domestic Capital Formation in the United Kingdom. They are estimates of historically accumulated values based on the age structure of the mercantile fleet; in 1910 to 1938 as published in Annual Statement of Navigation and Shipping of the United Kingdom; from 1850 to 1909 computed with regard to new tonnage registered, risk of wrecking in each year of service and the resulting age structure in 1910 (the first year with information on age of registered tonnage). From 1850 to 1910, costs per gross ton-constructed separately for hulls and for machinery, taking into account changes in materials used for hulls and of indicated horse-power of propelling machinery. In later years, the export prices of hulls and of machinery was used. Depreciation rates taken from the list published by the board of Inland Revenue.

(3) Harbours, Docks and Canals: Up to and including 1914 railway-owned harbours and canals are included in item 4. The first cost value of this group is taken also as equivalent to the net, depreciated value. The series is composed of loans of Public Authorities outstanding, issued capital and loans of independent companies established in published sources, and from 1920 also include capital expenditure of railways on harbours and canals. Loans for harbours of Scottish Local Authorities from the seventies backwards have been extrapolated by analogy with England and Wales. The first direct information for the latter was found in 1863; the development before that is guessed on analogy of issues of companies. Capital invested in independent canals before 1888 has been included on the basis of the amount established for that year in *Report of the Royal Commission...on the Canals and Inland Navigation of the U.K.* Parl. Papers (1907), XXXIII, 49.

(4) Railways and Tramways are taken by the same amounts for both aggregates of values. Up to 1913–14 railways are represented by the total paid-up capital, thus including not only their harbours and canals later transferred to the appropriate account but also some other assets (e.g. hotels) which may have been included already in the insurable assets. Since 1920 railways are represented by capital expenditure on railways themselves. Tramways include also trolleybuses.

(5) Water Supply: (*a*) From 1920 to 1938, depreciated value is based on loans outstanding of Local Authorities raised to allow for Water Supply Companies with regard to their share in industry established from Censuses of Production. Before that only loans outstanding of Local Authorities are included. (*b*) From 1920 to 1938, the first cost value has been computed with regard to the expenditure out of loans of Local Authorities and the resulting net change of their capital liabilities during the period. Before the First World War the first cost value has been imputed by a simplifying guess, that the accrued depreciation (amounts repaid) have been about one-third of the first cost (amounts borrowed).

(6) Gas: (*a*) From 1920 to 1938, depreciated value is computed with regard to the expenditure out of loans of Local Authorities and the resulting net change in both the amounts originally borrowed and net capital liabilities at the beginning and at the end of this period. Before 1920, a simplifying guess of a one-third accrued depreciation has been used. (*b*) The first cost value is the sum of amounts originally borrowed by Local Authorities and paid-up capital and loans issued by Companies, from Returns relating to Authorized Gas Undertakings.

(7) Electricity: (*a*) From 1920 to 1938, depreciated value is computed with regard to the maximum period for repayment of loans authorized, for individual groups of assets. Before 1920, a simplifying guess of one-third accrued depreciation has been used. (*b*) From 1920 to 1938, the capital expenditure is published in the *Electricity Supply*. Before that, authorized loans of Local Authorities and paid up capital and issued loans of Comapnies from Guarcke's *Manual*.

(8) Local Government: Non-trading services. Loans outstanding are net of loans for housing policy, the assets of which are deemed to be already in insurable assets.

(£400 m.) have been excluded. This leaves a total £11,112 m. comparable with the coverage of the sums of the man-made assets in Table 3 and other assets in the additional survey. Of the three valuations in our estimates the imputed minimum first cost value is nearest this figure, reaching £11,367 m. in 1914. Similarly a close agreement is found in 1935, when our figure of £21,761 m. for minimum imputed value is to be compared with Stamp's £21,500 m. In 1928, Stamp's substantially lower estimate £18,175 m. stands about half-way between our minimum first cost value (£19,819 m.) and our series of net values and his upper limit reaches our estimate of the minimum first cost value of all domestic real assets. (See survey on p. 103.)

APPENDIX 2

MEASURING THE TENSION FROM PAST PRICES

The indicators needed for interpreting such an aggregate as the values of insured assets differ from price indices or their moving averages in that they must have a continuously moving basis. The price level in each of the years is the basis for comparing the respective average for the assumed period of relevant accumulations of the impact of past prices. These independently computed measurements have only their purpose in common, i.e. the task of comparing the current price situation with influences from past price development accumulated over a certain period, deemed to be relevant for a given aspect of economic life. The *accumulated implications* are called here for brevity 'tension from past prices'. This common idea brings into the series of independently made computations an element of unity strong enough to substantiate its claim to consideration as a special indicator for measuring the impact of past prices transmitted between various time intervals by the mere duration of assets or the implications of business transactions.

The period for which the influences of past prices have to be computed inevitably varies according to how widespread the impact of past prices on the investigated phenomenon seems to be. The indicators of tension in Table 4 are calculated tentatively for four chosen periods of the assumed accumulation of influences from past prices. The first of the four indicators, described as tension from 'historical costs', compares accumulated historical costs of hypothetical purchases of buildings from last thirty years and of other assets from last twenty years with their replacement costs in the year (=100).

Table 4. *Tension from past prices accumulated by purchases or revaluations during assumed periods*

	Tension from			
		Revaluations during		
Year	*A.* 'Historical costs'	*B.* 5 years	*C.* 10 years	*D.* 15 years
1	2	3	4	5
1870	—	100·0	98·0	97·9
1871	—	97·0	95·8	94·9
1872	—	84·8	82·4	80·6
1873	—	80·6	75·7	73·1
1874	79·3	92·2	84·4	80·8
1875	88·4	105·2	95·2	90·7
1876	94·3	113·4	102·2	97·5
1877	97·3	113·6	105·8	101·3
1878	102·5	111·3	111·5	106·8
1879	106·5	108·9	115·6	110·7
1880	101·0	100·2	109·5	104·9
1881	104·0	101·0	112·1	107·6
1882	103·5	99·3	109·1	106·9
1883	105·5	100·8	106·8	108·9
1884	109·0	104·1	107·1	112·6
1885	110·6	104·1	106·7	114·3
1886	112·7	104·7	107·2	116·1
1887	112·3	102·7	105·7	113·7
1888	110·3	99·9	103·3	108·6
1889	105·7	96·1	99·0	101·9
1890	99·0	91·8	92·7	94·5
1891	102·0	96·3	95·5	96·8
1892	104·0	100·2	97·8	98·9
1893	106·4	104·5	101·1	102·2
1894	105·5	104·2	101·3	102·4
1895	106·8	103·8	103·2	103·7
1896	105·3	101·2	102·5	102·3
1897	102·9	98·6	100·8	99·9
1898	98·1	95·0	96·8	95·3
1899	92·1	91·1	91·3	89·7
1900	82·5	85·4	82·2	80·9
1901	88·5	94·8	89·0	87·8
1902	93·4	102·1	94·6	93·4
1903	95·5	105·4	97·8	96·4
1904	97·8	107·0	100·9	99·0
1905	98·0	103·5	102·0	99·0
1906	94·6	98·2	99·2	95·5
1907	90·6	94·2	95·9	91·7
1908	95·6	99·4	101·4	97·1
1909	98·2	102·1	103·6	100·1
1910	95·7	100·4	99·7	98·5
1911	94·7	99·3	97·9	98·1
1912	89·7	94·0	92·8	93·5
1913	86·9	92·4	90·3	90·8
1914	88·7	95·9	92·7	92·6
1915	74·0	83·6	78·7	76·7
1916	62·1	75·9	68·0	64·8
1917	55·0	73·4	62·3	58·2
1918	48·8	72·1	58·1	52·8
1919	41·9	70·1	53·2	46·7
1920	41·0	75·5	55·3	47·2
1921	58·9	109·6	81·8	68·8
1922	78·9	140·5	110·6	92·4
1923	82·2	136·9	116·6	97·2
1924	82·3	120·9	117·7	98·0
1925	85·6	106·7	122·1	102·6
1926	89·0	102·0	124·7	107·3
1927	92·0	102·6	125·0	111·5
1928	96·4	104·8	124·9	117·3
1929	96·4	101·7	115·5	117·7
1930	101·9	103·9	110·3	123·6
1931	109·2	106·9	111·2	129·9
1932	112·4	106·5	111·7	130·4
1933	113·2	104·5	110·1	126·7
1934	114·1	101·9	107·9	120·1
1935	112·1	98·5	103·8	110·2
1936	107·1	94·8	98·2	102·1
1937	97·6	89·7	90·2	93·3
1938	97·7	93·0	91·0	93·6
1939	96·4	95·9	91·5	93·4
1940	76·3	82·2	75·3	75·5
1941	71·3	82·3	72·9	71·2
1942	70·3	84·9	73·9	70·5
1943	70·5	89·1	76·3	71·1
1944	70·4	93·3	78·4	71·5
1945	70·3	94·3	80·5	72·1
1946	65·8	89·5	77·6	68·7
1947	60·4	84·4	73·5	64·5
1948	57·8	83·8	72·9	63·4
1949	57·6	86·7	75·5	64·9
1950	55·9	87·9	75·2	64·9
1951	51·3	83·9	70·5	61·0
1952	50·2	84·0	70·1	60·6

GLASTONBURY ESTATES IN THE TWELFTH CENTURY: A REPLY[1]

By M. POSTAN

I

I PRESENTED my brief note on the Glastonbury manors in vol. v of this *Journal* as a 'preliminary survey' of the contents of the MS. unearthed in the Trinity College Library by Dom Aelred Watkin. I decided to go into print at that stage and in that form in order to draw comment from other students of Glastonbury evidence and to benefit from the criticisms of what I avowed to be no more than a 'preliminary summary of conclusions' suggested to me by the study of the MS. To this extent Mr Lennard's critical observations have not come wholly uninvited and are not altogether unwelcome. If my welcome is nevertheless not as wholehearted as I might have wished, the fault is partly mine, but mostly Mr Lennard's. My fault is mainly one of compression. In trying to keep my note as brief and provisional as possible I refrained from expounding in detail all the evidence behind my conclusions. To have done otherwise would have necessitated a full-scale description of Glastonbury economy, and would, I thought, not be needed by commentators familiar with Glastonbury evidence. These expectations have to some extent been borne out, since several students, including Dom Aelred Watkin, have written offering further suggestions and emendations. Mr Lennard's article, however, makes it clear that the brevity of my note caused some misunderstanding and confusion. For this I owe my readers and Mr Lennard my apology.

On the other hand Mr Lennard's fault is to have attempted criticism and emendation on the strength of a narrowly circumscribed study. Whereas my 'preliminary conclusions' related to the whole period up to 1201 and were based on the juxtaposition of all the documents in the collection, i.e. Hilbert's Survey of 1171 and the two surveys which accompany it, Mr Lennard has chosen to confine his scrutiny to Hilbert's Survey and to one, or at most two, columns in my tables. Nor has he tried to interpret the evidence of this one survey with the help of the large amount of data about Glastonbury now available to scholars in both print and manuscript. It is, therefore, not surprising that while trying to correct my presumed mistakes, omissions and interpretations, he should have piled up a mass of ill-supported and, in my opinion, mistaken conclusions.

Some of Mr Lennard's remarks raise questions of principle, but most of them deal with details; and I hope the readers will forgive me if I deal with the latter first. Knowing Mr Lennard's interest in the Domesday Book and the surveys of the twelfth century, I had every reason to expect from his article a large crop of detailed emendations. It has, therefore, been something of a disappointment to find that out of thirty to forty points of detail he makes, only three, or at most four, represent acceptable corrections. The rest appear to me highly questionable and often wholly wrong.[2]

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[1] R. Lennard, 'The Demesnes of Glastonbury Abbey in the Eleventh and Twelfth Centuries', *Econ. Hist. Rev.* VIII (1956).

[2] The mistakes are as follows. In my Table II (Sheep) Cranmore is credited with twenty sheep instead of 200 as a result of a typing error. In my table I West Monkton is credited with the figure of four ploughs in 1086 which belongs to East Monkton. I dated Hilbert's survey as 1176

Most of Mr Lennard's emendations relate to manors which I am supposed to have unnecessarily omitted from my tables of plough-teams, sheep and rent. Mr Lennard is, of course, too courteous a controversialist to accuse me of omitting facts in order to better my argument. Unwary readers may, however, easily get the impression that my omissions were disingenuous or at least arbitrary and may be impressed by Mr Lennard's attempts to restore them. Therefore, at the risk of boring the reader, I shall briefly run over the names of some of the manors which Mr Lennard recommends for inclusion, indicating in each case the reasons for which they were omitted and must stay out.

As I explained in my article, the omissions from Table I are confined to manors whose demesnes may have undergone radical changes in composition between 1086 and 1201. The manor of Glastonbury itself, being a headquarters manor of the Abbey and a semi-urbanized vill, underwent greater changes in its territory than any other of the Abbot's manors. Most of the additions were through acquisition of property from free tenants,[1] though the main change in Glastonbury territory probably came through the absorption of much of the territory of West Pennard.[2] The next most important omission is that of South Damerham. Not only did the manor at some times include and at other times exclude the large satellite manor of Martin (or Merton as Mr Lennard describes it) but it also at times comprised the berewicks of Twohyde and Tidpit. At one period it was also obscurely involved with the Bishop of Winchester's possessions in the same vill, and in the early twelfth century it also suffered from arbitrary seizures of land.[3] Indeed so confusing was the situation of the manor in 1086 that the Domesday jurors, in a formula most unusual in that survey, declared themselves to be ignorant of the area of the demesne—'propter confusionem terrae'. Grittleton was omitted because at some time in the twelfth century the

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or the middle year of the abbacy of Robert of Winchester, with whose reforms I associated it. I subsequently discovered that Hilbert died in 1173, and could not have produced the survey in 1176. Finally, in explaining why the figures of Damerham were not usable, I quoted the figure of plough-lands instead of that of plough-teams: this error however did not affect either my decision not to use the figure nor my totals in tables, and I should have detected it myself had I decided to use the figure. The question whether my figure for Sowy is right depends on the proper rendering of *ociosa animalia* (see below, p. 110 n. 4), and on this point I am still unrepentant. My figure for Nettleton in 1171 is an interpolation from the survey of 1189, but Mr Lennard does not apparently regard it as irrelevant (Lennard, p. 355, n. 3).

[1] Of this, thirteenth century evidence will be found in Dom Aelred Watkin (ed.), *The Great Chartulary of Glastonbury* (Som. Rec. Soc.), II, 292–5, 340, but the context makes it clear that acquisitions must have begun much earlier. There is also added uncertainty about the islands which were lumped with Glastonbury in the Domesday Book. Later sources account for one of them (Mere), but not for the other two.

[2] Judging from the names and locations of demesne furlongs in the thirteenth century, the ground between the Isle of Glastonbury and the Pennard heights bordering on and probably forming part of the Domesday vill of Pennardminster was absorbed into Glastonbury in the process of being reclaimed, though the twelfth-century core of West Pennard apparently remained a member of the conjoint manor of West and East Pennards. Longleat MSS. Bailiff's Accts. *passim*, e.g. no. 10,762. William of Malmesbury includes the whole of West Pennard in the 'twelve hydes' of Glastonbury.

[3] Longleat MSS. Bailiff's Accts. *passim*, e.g. nos. 10,655, 10,656: cf. also list of Damerham furlongs in B.M. MSS. Add 17,450, fol. 188. At the time of this survey, i.e. in the mid-thirteenth century 'South Todpule' (Tidpit) alone accounted for 160 acres out of the total of 656 in the demesne of Damerham without Martin. For the Bishop of Winchester's lands see Hilbert's Survey; '*Tunc de hoc manerio subtraxit episcopus Winton. duas hidas quas dedit Ricardo Pictavi*', Trinity Coll. MS. 724, R. 5.33, fol. 116d. This survey also records the seizure of 300 acres of meadow and pasture by the Earl of Gloucester. For the Bishop of Winchester, see Professor Darlington in *Victoria County History* (*Wilts.*) (1955) II, 84, 86 and 96.

demesne was let out to the villagers, some of it may have been shared out among the lessees.[1] Pucklechurch, a detached possession in Gloucestershire, lost a hide to Hugh Mortimer some time in the twelfth century, and I have not been able to discover yet whether and at what time the hide was restored and whether it did or did not come out of the demesne land.[2] Mere was omitted for various reasons but mainly because of the difficulty of deciding whether the park and village of Westhay were included in Mere in the twelfth century as they certainly were in the thirteenth.[3] Ashbury was omitted because of its obscure and badly documented territorial involvement with the fields of Kingston (probably Kingston Lisle), but also because of changes in the demesne which were on a scale too great to be explained by piecemeal transformations such as were occurring elsewhere.[4] Blackford, with its striking decline of teams from three to one between 1086 and the 1130's, was originally omitted for the same reasons, though on second thoughts I might have included it in my table.

These were my 'omissions' in the table of plough-teams. I may have erred on the side of over-caution in leaving them out, but I am sure that Mr Lennard errs on the side of over-audacity in including them. Had I included them my deduction that plough-teams declined would have been re-inforced, since these manors, including Grittleton, possessed forty-one plough-teams in 1086 and only thirty-two in Henry I. Mr Lennard himself admits that if all his 'emendations' were accepted, the total with Grittleton, but without Sowy, would still reveal a marked decline, even if a slightly smaller one than that shown by the table, i.e. 20·1 per cent compared with my 24 per cent.[5]

My omissions in the table of rents (Table II) were, I believe, equally justified and Mr Lennard's restorations equally ill-advised. Mr Lennard suggests that I was mistaken in omitting from my table the manor of Baltonsborough. The manor was and must be omitted for the simple reason that throughout the greater part of the period it was not accountable for rent. In Hilbert's Survey the description of this manor, and of this manor only, is accompanied by the statement that it *erat ad elemosinam monachorum* and we learn from another source that, in 1079, Abbot Aglenoth gave it to the convent of Glastonbury.[6] It is therefore not surprising that the money payment in the time of King Henry does not look like rent, and is not described as such. The sum—one hundred shillings—is altogether too round as well as too large a figure to represent the real yield of rents of assize. It was almost certainly a money charge levied on the manor: not an unreasonable or an uncommon procedure in the case of prebendiary or conventual estates. The manor of 'Lym' (whether it be Uplyme or Lympsham) is, and must be, omitted from the table of rents because, in addition to money rents recorded in the survey, it also rendered two weights of fish. Not only are the values of fish not given, but we are also kept in the dark as to whether the render was a weekly one, as in 1086, or an annual one, and whether it formed part of the demesne farm, or represented fish rents from tenants' holdings.[1] Wrington is, and must be, omitted because we are told that at a later period the revenue of the manor included £10 of *auxilium* (also an exceptional statement). Had Mr Lennard consulted the inquest of 1201 he would have noticed that the money yield of the manor at that date included an *auxilium* of £2, which apparently had to be added to the figure of *gabulum assisum* to give a proper estimate of rents for that year. We do not know whether this smaller sum was included in the rents of 1171 or in the £10 of *auxilium*.[2] The case of Damerham has already been accounted for.[3]

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[1] *Liber Henrici de Soliaco* (Roxburghe Club, 1882), p. 107: '*Homines tenent villam ad firmam sed nullum receperunt instauramentum neque implementum.*'

[2] Hilbert's Survey, *op. cit.* '*Tunc de hoc manerio deforciat Hugo de Mortimer unam hidam.*' This is the only reference of this kind in Hilbert's Survey. Similar seizures in some other manors are recorded elsewhere, but do not present much difficulty: in this case the failure of the subsequent two surveys to mention Mortimer's hide is difficult to interpret. In addition, a reliable estimate of plough-teams is made difficult by the statement that land in common fields was ploughed 'as if there were five plough-teams': '*terra in communi arata est adeo bene sicut ibi essent quinque carrucate bovum*'. Hilbert's Survey, *op. cit.*, and *Liber Henrici de Soliaco*, p. 101.

[3] Westhay is not mentioned in the Domesday. For later references to the park, fields and probably vaccary of Westhay, see G. Elton (ed.) *Rentualia et Custumaria, etc.* (Som. Rec. Soc. Pub.), pp. 209 *et seq.*; same survey in B.M. Add. MS. 17,450, fols. 145d *et seq.*: '*quondam domus cum curtilagio ad vaccariam.*' Bailiff's Accts. indicate that the vaccary was probably attached to Westhay: Longleat MSS. 6,365 and *passim*. For the topographical relation of Westhay to Mere, see Dom A. Watkin, *op. cit.* II, 124.

[4] The fields at Combe-by-Kingston appear in the cropping plans of the thirteenth- and the early fourteenth-century Bailiff's accounts, but I have not been able to find any evidence to show whether they formed part of the manor in the earlier period: cf. Longleat MSS. 10,633.

[5] Lennard, p. 356 and n. 3.

[6] Hilbert's Survey, *op. cit.* fol. 116d; Bodleian MSS. Wood, I, fols. 253–253d.

So much for the details of rents. But overshadowing the argument for the inclusion of this or that rent is Mr Lennard's admission that the inclusion of all the manors of his choice would have made little difference to the final totals: or to quote Mr Lennard himself, the totals would show 'a percentage increase slightly smaller' than mine 'but not appreciably different'. If so, was this particular voyage really necessary?[4]

There remains only one other allegation of omission: an allegation of a somewhat wider implication than the others. In criticizing my Table III (Sheep) Mr Lennard suggests that I had 'overlooked' the statistics for sheep in the Exon. Domesday. On this point Mr Lennard, who must be aware of my connexion with Eileen Power's history of medieval wool, might have guessed that I would not dismiss the Exon. Domesday's sheep without some reason. In fact the reasons are several; and if some of them may not be familiar to historians, others are.[5] Thus one and a rather obvious reason is that in 1086 sheep pastures carried considerable numbers of goats, which were in later generations largely replaced by sheep. There were some 300 goats on the nine or ten Somerset manors of Glastonbury alone, and it is unfortunately impossible to make proper allowance for them without having resort to a purely arbitrary conversion factor. The sale value of a twelfth-century goat was about twice that of a sheep, but, judging from modern parallels, its voracity must have been considerably

[1] Hilbert's Survey, *ibid.* '*tempore regis Henrici...reddebat quaque septimana duas summas piscium. Modo...reddit duas summas piscium et valet vij li.*'

[2] *Ibid.* fol. 115 records the rent of £9. 4*s*. 0*d*., and total value of £25, but adds '*set non potest tantum reddere sine auxilio de Wynescumbe quod valet melius quam x li.*' The survey of 1201 records the rent of only £8. 11*s*. 6*d*., and a *donum* of £2. As holdings had apparently been increasing and demesne ploughing declining, the decline in rent is highly implausible. Hence the presumption that a *donum* or *auxilium* had been reckoned with it in the past.

[3] See above, p. 107, and n. 3.

[4] Lennard, pp. 357–8.

[5] Lennard, pp. 356–7. Miss Power's difficulty was that of reconciling the figures in Exon. Domesday with the distribution of pastures and with twelfth-century flocks. The probability is that the returns represent the numbers of sheep which the commissioners and the juries found on the days on which they visited the manors, and these were bound to fluctuate very widely from season to season. This is probably why the figures were not included in the final version of Domesday Book.

greater, which is probably why it was displaced in a later or more efficient age.[1]

Another and even more important reason why the Exon. figures of sheep are not usable is that, contrary to the apparent implication of Mr Lennard's remarks, the Exon. Domesday does *not* give the figures of livestock for all, or even for the bulk, of Glastonbury estates. Its figures of livestock are confined to the Somerset manors, and leave out not only the detached sheep-farming manors in Berkshire, Gloucestershire and Dorset, but the whole of the Wiltshire possessions of the Abbey where many, and eventually most, of the Abbey's sheep pastures were to be found.[2] Unfortunately we cannot, in dealing with sheep, treat the manors for which evidence is available in isolation from the manors from which the evidence is lacking. Thirteenth-century bailiffs' accounts make it clear that Glastonbury sheep flocks, like those of many other great estates, were inter-manorial, but Mr Lennard need not have gone to the thirteenth-century bailiffs' accounts to discover this. Do we not read in the 1189 survey that the flocks of Martin were supposed to consist of 500 draft ewes, or that on the manor of Ditcheat sheep were kept only in the summer?[3] These references do not, as Mr Lennard suggests, throw doubt upon the relevance and significance of the livestock data of the survey, but are merely evidence of the inter-manorial character of sheep farming.[4]

This might not matter very much in the case of the Wiltshire Deverills, which formed a rather detached group of pastures, or of Pucklechurch in Gloucestershire, or of South Damerham in South Wiltshire, or Ashbury in Berkshire, which were probably too remote to pool flocks with the Somerset manors. But it does probably matter in the case of Buckland, of Sturminster Newton, and possibly of Winterbourne Monkton, which, judging from the thirteenth-century evidence, were more closely linked up with Somerset manors. In compiling my table I took care to include the first two of these sheep-farming manors, although what I know now about the Glastonbury estates, and did not know in 1952, leads me to think that the omission of Winterbourne has reduced the value of the table. But for the same reasons a column of figures from the Exon. Domesday, from which all the Wiltshire manors were excluded, would be wholly misleading.

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[1] The Somerset manors for which the Exon. Domesday gives numbers of goats include Winscombe, Walton, Ashcot, Pilton, Batcombe, Baltonsborough, Wrington, Ditcheat and Glastonbury, and the total is 292; it does not include the goats of sub-tenants. Hilbert's Survey does not mention any goats on Somerset manors for Henry I, and only ten (in Winscombe) for 1171. Outside Somerset there was a large herd of goats in Sturminster Newton in the 1130's which apparently disappeared by 1171. But even converted into sheep at the rate of 20 to 1, the goats listed in the Exon. Domesday would greatly outnumber the 438 'additional' sheep in 1171.

[2] According to the Domesday summaries the Somerset manors comprised some 195 hides with seventy-five and a half plough-teams on demesnes; those of Wiltshire 337 hides with forty-two ploughs on demesnes. (The actual assessment in Wiltshire amounted to some 258 hides.) The low hidation of Somerset manors undoubtedly reflected large exemptions from geld, while relatively low figures of Wiltshire plough-teams reflected the pastoral character of these manors. In the mid-thirteenth century the 'outlying' manors provided more than a half of the Abbey's revenues. *Exon. Domesday*, fols. 173 and 527b; cf. Darlington, in *V.C.H. Wilts*, II, 218 n. 2.

[3] *Liber Henrici de Soliaco*, pp. 39, 129 *et seq.*

[4] Cf. Lennard, p. 362. A jury recording only the stock it found at the time of inquest would not bother to specify that certain stock could be kept only in the summer. The two entries apparently mean that Ditcheat had only summer pastures and that its sheep wintered elsewhere, and that the pastures of Martin were not suited to lambs and lambing ewes. I have translated *oves ociosa* as draft ewes. Mr Lennard suspects me of transcribing *ociosa* as *operosa* (p. 355 n. 2). All I have done is to refuse to take the adjective in its classical meaning of 'idle' or 'leisurely'. Its exact sense is somewhat elusive, but the balance of probability is that it was most frequently applied to non-breeding animals: e.g. Doulting in Hilbert's Survey, where the flocks contained thirty-three *oves lactrices* and forty *oves ociosa.* (fol. 116); also *Liber Henrici de Soliaco*, p. 133.

So much for my detailed faults of omission. The main faults of commission, which Mr Lennard imputes to me are by comparison very few and are mostly confined to supposed mistakes in the identification of place-names. Unfortunately, I find it difficult to accept Mr Lennard's alternative identifications. I dare say some uncertainty attaches to the manor of 'Lym' which I identified as Lympsham, but which Mr Lennard thinks was the double Dorset-Devon manor of Lyme (or rather Uplyme and Lyme). The case against Mr Lennard's hypothesis is that in later documents, e.g. in those of 1189 and 1201 which he does not consider, Lympsham is returned separately under that name as an associate manor of the Brent group, whereas Lyme is not returned at all; that Lyme in fact had for some time before then been removed from the body of abbatial manors—one of the two manors may have been assigned to a subtenant, the other was allocated to the prebend of the Cellarer. The only strong piece of evidence in favour of Mr Lennard's identification, but which Mr Lennard himself does not invoke, is the annual render of fish, suggesting a site by the sea. This being the evidence, I am not prepared to defend my identification *à l'outrance*, but the balance of probabilities still inclines me in its favour.[1] No such uncertainty attaches to Mr Lennard's confident theory that the manor of Street was not surveyed in the Domesday, and that the teams of Street were therefore contained in the returns of either Glastonbury or Walton and to that extent invalidate my totals in my table. Had Mr Lennard consulted the evidence of charters and the bailiff's accounts, he would have realized that the manor of Street was in fact part of a composite manor of Street with Upleigh and Leigh and was surveyed in the Domesday under Leigh (Lega).[2]

This I think accounts for the points of detail raised by Mr Lennard. With them out of the way, we can turn to Mr Lennard's more general observations.

III

Mr Lennard's general argument is that the changes on Glastonbury demesnes cannot be viewed as a general trend of declining cultivation and rising rents. Rents did not rise in the same proportion as the plough-teams declined; the decline in plough-teams denoted not a contraction in demense arable, but an alteration in the terms of farming leases; and in general, the phenomena noted by me were fortuitous in origin and local in incidence.

Mr Lennard's 'general' contentions are thus three in number, and I propose to discuss them in the ascending order of their generality. The first and lowest in this order comes his contention about the relation, or rather the lack of relation, between declining plough-teams and rising rents. Mr Lennard's attitude on this point appears to be coloured by his impression that the movement of rent did not appreciably diverge from that of plough-teams. This impression is, I am afraid, at variance with facts, and may partly be due to a flaw in Mr Lennard's statistical argument. In the three manors about which reliable evidence for the time of King Henry is available the divergence between the trend of rents and that of plough-teams is clearly marked. In all of them rents rose, while plough-teams either declined, as in Street and Ashbury, or failed to expand, as in Ditcheat. The rents did not of course rise to the same extent everywhere. The rise was in the region of 50 per cent in Street and Ditcheat, but in Ashbury the rise appears to be less than 2 per cent, i.e. £14. 5*s*. compared with £14 at the earlier date.[1] It is, however, not the rise of rents in absolute amounts and taken in isolation that concerned me in my note, but their relation to the numbers of plough-teams. The problem in other words is one of correlation. And, although this is not the right place and I am not the right person to expound the niceties of statistical correlation, I hope I shall not be accused of excessive simplification if I point out that had the rents changed in the same direction and to the same extent as plough-teams, the revenue from rents at Ashbury would have been not £14. 5*s*., but somewhere near £9. 10*s*. The divergence between the two trends and the extent to which income from rents failed to follow the declining trend of demesne agriculture is thus not 5*s*. but £4. 15*s*. The same, of course, would have applied to the other apparently small increases in rents in the manors which Mr Lennard cites, had their figures been sufficiently reliable to be used.[2]

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[1] *Exon. Domesday*, p. 148. Assignment to cellarer is specified in *Liber Henrici de Soliaco*, p. 9, but not mentioned in relation to *Lym* in Hilbert's Survey. If these two entries relate to the same manor, the assumption would be that the assignment took place between 1171 and 1189. But if the Domesday Lym and the manor I identified as Lympsham are the same, there would still be the difficulty of reconciling the values, which were £3 in the Domesday Book, £7 in 1171 and £12 in 1189. However, the possible confusion between the Devonshire and the Dorset manors might account for the difference.

[2] *Exon. Domesday*, p. 152 (fol. 164b). For fields and holdings in Leigh see Longleat Bailiff's Accts. *passim*: e.g. no. 11271 (12 John of Kent) with 164 acres recently let in Leigh; cf. Dom A. Watkin, *op. cit.* p. cxliij.

However, to do Mr Lennard justice his case does not wholly rest upon mere disparagement of increased revenues from rents, but on a detailed argument against my 'deduction from the figures' that the 'numbers of the lord's ploughs roughly correspond to the decline in the area of the demesne lands he cultivated'. His argument purports to show that new holdings on the demesne were as a rule very few, and he bases this argument largely on his estimate of new holdings on the demesne in the survey of 1189. In doing so, he not only underestimates the probable amount of demesne lettings in that survey,[3] but what is even more important, apparently fails to realize that that survey, which is eighteen years later than his terminal date of 1171, cannot provide any evidence of the changes on the demesne which may have occurred in the first seventy years of the century. The main function of a manorial survey or custumal was to register the changes which had occurred since the previous survey. As there obviously had been a survey in 1171 or soon after that date, the survey of 1189 would normally draw attention to changes which may have occurred in the intervening eighteen or twenty years. This simple proposition of manorial diplomatics is clearly reflected in those dates which the survey of 1189 in fact mentions. Some of the changes which had taken place before 1171 are referred to as having taken place in Bishop Henry's time, but many of these changes (e.g. new holdings on 'botland') are listed without dates. In general a large proportion, probably most of the new rents and holdings are said to have been introduced in the time of Abbot Robert, i.e. 1171 and 1188.[1]

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[1] See my Table IV (p. 366); cf. also p. 365: 'the rents of assize...changed relatively little, but...such changes as could be detected were mostly in the upward direction'.

[2] The only apparent fall in *gabulum* Mr Lennard is able to muster is in Baltonsborough, but this is because he mistook the annual render of the manor for its rent.

[3] Mr Lennard finds in the survey of 1181 lettings of demesne on a considerable scale only on the manors of Kington and Badbury. I believe that if the various 'free' holdings, especially those on the demesne 'forelands', 'overlands' and 'botland's' were properly analysed, large lettings would be found on many other manors, and most clearly in Blackford (45 to 50 acres), Ashbury (90 to 100 acres), South Brent (*c*. 95 acres). The subject of demesne lettings is too large to be dealt with merely in passing, and I hope to return to it again soon, but I should like to record here my conviction that peasant holdings were created on most demesnes throughout the twelfth century; and that this process, coupled with reclamation of waste, accounts for the striking difference between the demesnes in the late twelfth century and their antecedents ('old demesnes', 'inland') of the eleventh and the early twelfth centuries.

However, what I find most puzzling is not Mr Lennard's excessive reliance on an irrelevant survey, but that he should have thought this evidence in any way pertinent to my argument. Why should he find it necessary to prove that the new rents, the areas of new demesne holdings, and the decline of demesne teams were not always in close or faithful correspondence? Did I or anyone else ever suggest that they were? In case other readers might share Mr Lennard's misapprehensions about what I actually said in my article, I shall allow myself to reproduce the relevant passage. On p. 36 of my note I remind the readers that

> if the total yield from rents sometimes fell, it was merely because holdings lapsed, were abandoned by tenants, or were expropriated by landlords; if they rose this was mostly when additional land was let out to rent-paying tenants so that *incrementum reddite* could be charged or else when other customary dues such as labour services were commuted for money, and money payments were lumped with the rent.

I then proceeded to remind the readers that when 'we find customary rents rising, as they appear to have done in the twelfth century, the presumption is that *either* more land was let out to tenants, *or* that higher rent was being paid in respect of services commuted *or both*'.[2] In these passages a second variable—that of commuted services—accompanies all my references to decline of demesne arable, but had I been able to anticipate misconceptions like Mr Lennard's I might also have added a few words about new lands won from the waste and about the demesne acres and furlongs which could be lost to cultivation altogether, not taken up by peasant tenants, and therefore yield no rent: a circumstance to which I drew attention elsewhere.[3] And it is these and similar circumstances that I had in mind in penning the concluding passage of my note. To quote again: 'though the rents rose, they were not sufficient to lift the general level of manorial income or to counteract in full the slump of income from the direct exploitation of the demesne'. In fact neither I, nor anyone else I know of, have ever been so foolish or so ignorant as to argue that changes in demesne plough-teams were the only cause of fluctuating rents and that reduction in teams would therefore result in immediate and proportionate increases in the lord's rents.

So much for Mr Lennard's general argument number one. His argument number two is that the numbers of plough-teams and oxen in the surveys, and presumably in the Domesday Book, represent not a true inventory of stock employed on the demesne, but only a statement of the farmer's responsibility for the stock received from the landlord; and that, consequently, the decline in the numbers of oxen in 1171 reflects not a reduction in the agricultural activities of the demesne, but merely a change in the terms of a farmer's lease or in their employment of stock.[4] I am afraid I find this theory unacceptable and unhelpful. It is unacceptable because it wrongly assumes that most Glastonbury estates were at farm; it is unhelpful because it leaves the important questions unanswered.

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[1] The difficulty of listing the changes which occurred before Bishop Robert's time is that they are entered undated. However cf. p. 112 n. 3.

[2] My note, *Econ. Hist. Rev.* v (1953), p. 336 (italics not in the text).

[3] E.g. my article 'The Fifteenth Century', *Econ. Hist. Rev.* IX (1940), 161.

[4] Lennard, pp. 360–1.

Let us begin with the unacceptable. Mr Lennard's argument that the decline in plough-teams must represent changes in stock received by farmers pre-supposes that the bulk of the manors were farmed both in 1130's and in 1171. This pre-supposition is in conflict with facts at two points at least. The first clash is with the proper sense of the Latin text. Mr Lennard does not quote in full the passages in the survey of 1171 dealing with stock. As that survey is not easily available, I may be allowed to repair Mr Lennard's omission by reproducing the relevant formula. In describing the manor of Street, the survey declares that in that manor

> ... tempore regis Henrici quando fuit ad firman erant ibi iij carruce queque de viij bobus, ij auri' et CC oves, sex sues, de gabulo assiso xx s. et iij d. Cum tali instauro reddebat C s. Modo sunt ibi xv boves, j aur', de gabulo assiso xxxiiij s. et iiij d. ob. et valet xlix s. et vj d.[1]

In my simplicity I took it and still take it to mean what it says, i.e. that in King Henry's time when the manor was held at farm its stock was x, but that now there were to be found on the manor the stock y. The compiler of the survey was obviously not averse from mentioning the farmer and the stock he took over where he had business to do so, i.e. in relation to the past. He did not do so in relation to the present because he obviously was dealing with the actual stock and not the farmer's responsibility for it. But another and an over-riding reason why the compiler did not mention the farm at the later date is that on that date in most manors there was no farmer for him to mention; and therein Mr Lennard's second clash with his evidence will be found. For had he been able to give proper attention to other surveys of the late twelfth century, he would not have failed to notice that at that time a very large proportion of the Abbey's manors, including nearly all the manors in my table, *were not at farm*.

This rather crucial fact may be worth elucidating at somewhat greater length. The Savaricus survey of the end of the century begins with the statement that the Abbot found the following manors at farm and the following manors directly managed. The list of the manors directly managed comprises Glastonbury, Pilton, East Pennard, Ditcheat, Batcombe, Newton, Kentlesworth, Weston Zoy, Middle Zoy, Othery, Ham, Butleigh, Shapwick, Ashcot, Walton, Baltonsborough, Street, Brentmarsh, and Doulting: nineteen out of the thirty-eight manors listed. Moreover, the nineteen manors directly managed include most of the home manors, while of the nineteen odd manors not directly managed, several, i.e. at least three and possibly nine, were strictly speaking not at farm, but in the hands of the Bishop of St Davids, and only nine appear to have been unmistakably at farm.[2] This separation of manors farmed and unfarmed will not be found equally clearly in earlier surveys, but in case the readers might be inclined to assume that the change over had occurred in the 1190's, immediately before the election of Bishop Savaricus, they would be advised to pay attention to the distribution in the formulae recording the demesne stocks in the survey of 1189. This distinction is drawn more clearly still in the survey of 1171 and gives added meaning to the *fuit* in its formula *quando fuit ad firmam*. The manors in which this statement occurs have their stock enumerated twice: once when at farm, i.e. in 1130, and once in 1171. But only one enumeration—when at farm—is given for a number of manors, mostly outlying ones, which were still at farm in Bishop Savaricus' time, and presumably also at farm in 1171.[1]

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[1] Hilbert's Survey, *op. cit.* fol. 115.

[2] Trinity Coll. MS. 724. R. 5.33. fol. 117d. The statement that the *Episcopus Menevensis habuit tunc* may apply only to the manors of Nettleton, Grittleton and Kington immediately following, but on purely etymological grounds could also be taken to apply to the seven manors at the end of the list.

So much for the facts behind Mr Lennard's theory. But as I have just said, the theory would be very unhelpful even if its facts were truer than they are. Mr Lennard's contention is composed of at least two independent propositions both of which appear to me to lead to highly improbable generalizations. Thus at one stage Mr Lennard appears to argue that the apparent decline in the numbers of oxteams may have resulted from more efficient employment of stock by the farmers. That in some places manors were understocked and in others overstocked, and that an overstocked manor might lose some of its stock without curtailing its arable, is something which needs no proof and which I took for granted in my note.[2] But how does this help to account for the fact that the changes were all in one direction and that in the period between the Domesday and Hilbert's Survey nineteen out of twenty manors in my table, and if I am not mistaken, twenty-one out of twenty-seven in Mr Lennard's list, showed a decline, and none, or at most two, manors showed a rise? Are we to conclude that in the hands of farmers the English manorial system in the twelfth century witnessed a general rise in the efficiency of capital? This conclusion would be so obviously at variance with the current views of twelfth-century England and so difficult to reconcile with the universal abolition of farming in the course of the thirteenth-century reforms, that I do not believe that Mr Lennard would be prepared to urge it. But the alternative conclusion would be that there was a real running down of stock by farmers—a conclusion not far removed from mine.

To my mind equally unhelpful is Mr Lennard's second proposition relating to farms. According to him, the figures of livestock represent mainly the lord's share of the farming stock and bear no necessary relation to stock actually employed. An unkind critic might, of course, point out that this argument is difficult to combine with the theory of more efficient utilization; but what worries me is the improbable generalization which it suggests. For if

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[1] In Hilbert's Survey of 1171, the wording of entries of the manors of Glastonbury, Street, Butleigh, Walton, Ashcot, Shapwick, Ham, Sowy, West Monkton, Brent, Wrington, Mells, Doulton, Pilton, East Pennard, Ditcheat, Baltonsborough and Lympsham—altogether a series of eighteen manors almost identical with the list of directly managed manors in the Savaricus survey and comprising most of the manors in my table of plough-teams, is the same as the formula for Street quoted in the text here. The other manors—also a list nearly identical with that of 'farm' manors in the Savaricus survey—say nothing about the stock 'now' (*modo*), and the typical formula is that of Winterbourne: '*tempore regis Henrici quando fuit ad firmam pro xiij li tunc habuit xvj boves et unum averum et de gabulo assiso xj li*'. Nothing is said about rents or stock in 1171, presumably because the manor was still at farm. In the survey of 1189 the difference appears to be reflected in references to stock. Whereas on manors like Winscombe, Christian Malford, Kington, Idmiston, Nettleton, Winterbourne, Pucklechurch and Brent, the *firmarii* are mentioned, or else the word '*receperunt*' is used to indicate that the stock was listed as received by farmers, on others the stock is either not mentioned at all, or else introduced without any reference direct or oblique to farms. In this group Brent appears to be the only manor not farmed in 1171.

[2] See p. 116, n. 2. Mr Lennard appears to think that my note 'presupposes that the recorded plough-teams are the total numbers wholly employed on the demesnes and that these...were sufficient and no more than sufficient for their cultivation' (p. 359). This is a misunderstanding. Nowhere did I assume full and efficient employment of stock, and it was unnecessary for me to do so. I was comparing plough-teams at different points of time, and for this purpose all I had to assume was that the efficiency of employment did not materially change during the period. In making this tacit assumption I weighted the case against myself. In the prevailing conditions of disorder and indirect management, efficiency was more likely to decline than to rise. See below, p. 118.

Mr Lennard's explanation were true, the figures in his and my list would indicate that the general tendency in the twelfth century was to raise the farmer's contribution of agricultural capital and to reduce the landlord's. How can this generalization be related to other features of the twelfth century, and where is the evidence to support it?

III

Much more could be said about some of the other aspects of Mr Lennard's handling of farms—his facts as well as his logic, but I propose to reserve my further comments on Glastonbury farms for a further occasion and pass to Mr Lennard's main and most general notion, i.e. that all the changes on the Glastonbury manors which I listed were local and accidental.[1]

There is no denying that on this question disagreement is to a large extent one of outlook and purpose. There will always be some historians who go to their evidence in the hope of finding general cases, and others who do the same in the hope of losing them. I am nevertheless sure that the difference between Mr Lennard and me is one not merely of temperament and philosophy. It is due partly to a disparity in the range of my and Mr Lennard's evidence and partly to an artificial and, I believe, untenable distinction between local events and general forces.

First of all, the range. To me the fact that the total area of plough-teams recorded in the survey of 1171 showed a decline of over 20 per cent compared with the 1130's, and that the decline was exhibited by an overwhelming majority of manors, whereas a rise occurred only in few, was sufficient to establish a *prima facie* possibility that a general tendency was at work. But what in my opinion turned a mere possibility into a high probability is the consistency of the facts of 1171 with other facts which unfortunately fall outside Mr Lennard's self-inflicted chronological and documentary limits. To begin with I could not dismiss the rest of the Trinity MS., which showed that the fall continued for at least another generation after 1171. This I tried to bring out in those columns of my tables which Mr Lennard has chosen to disregard. In addition I also had to take account of other facts which I discussed or at least mentioned elsewhere. Among these facts were the signs of similar decline on other great twelfth-century estates for which comparable evidence is available, i.e. those of Burton, Durham and Ramsey, and probably also on that of Shaftesbury. Above all, I had to bear in mind that the signs faded out or disappeared altogether in the thirteenth century. Taken all together the changes appeared to me too synchronous to be wholly local and accidental. In the language of statisticians their distribution was sufficiently 'non-random' to suggest the probability of a general trend.[2]

Mr Lennard may consider my susceptibility to the logic of numbers excessive and my interpretation wrong. In that case I must be allowed to point out that if I err I do so in very good, indeed the best possible, company—that of the official chronicler of the Abbey. For when John of Glastonbury comes to describe the revival of the monastic estates under the reforming thirteenth-century Abbot,

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[1] Lennard, pp. 362–3.

[2] The synchronization of the figures would however come out even clearer had I grouped the manors according to the behaviour of their figures. Thus between the 1130's and 1171 the plough-teams on my Table I declined on thirteen manors, remained the same on six manors and increased on one. Between 1086 and 1171, plough-teams declined on nineteen manors, remained the same on one and increased on none.

Michael of Amesbury, he appears to have no doubt as to what had happened before Michael had succeeded to the abbacy. For we are told that one of the Abbot's achievements was to restore the plough-teams which had fallen into disuse under his predecessor: *carrucas tempore predecessoris sui prostratas celeriter relevavit.*[1] John was obviously not the only contemporary who shared my error. Indeed the whole of Hilbert's survey, on which Mr Lennard has concentrated, reads as a document designed to draw attention to the decline since Henry I's time. For unless this was its purpose why should it have insisted on comparing at every point the situation in his time with that at the time of King Henry. Overt comparisons of this kind are not the real object of manorial surveys, and even if they were, it would have been strange to find the survey harking back to a period nearly forty years earlier. In fact the whole document is a kind of statistical lament for the good old times.[2]

Contemporary testimony alone would have been sufficient to make Mr Lennard's insistence on local causes appear over-confident. What makes them not only over-confident but also much too general is their underlying juxtaposition of local events to national causes. Needless to say, some local accidents there were, and I should have been the first to cite them had they been discoverable. But to account for all that was happening on Glastonbury manors by fortuitous combination of local circumstances is to succumb to what is now rapidly becoming the occupational disease of historians. Nothing will nowadays win readier applause from the profession than the championship of local phenomena against the encroachment of historical generalization.[3] But it is my profound conviction that, by insisting on local and accidental character of economic changes in the Middle Ages, historians frequently conjure up an artificial contrast between general trends and local events. Very much of what, viewed from within parochial bounds, may appear to be a mere drip from the parish pump, will on more detached view turn out to be a local response to changing pressures in national water mains. Thus, the behaviour of demesne farmers at the different manors, indeed the very existence of farmers, may appear to Mr Lennard to be accidental; but to others they reflect the peculiar conditions of the twelfth century which made the employment of farmers necessary and the efficient control of them difficult. Similarly, the seizure of land by turbulent neighbours and all other incidents of feudal and civil war may appear to Mr Lennard merely as local incidents; but to others like myself (or for that matter the learned author of the *First Century of English Feudalism*) they appear as local manifestations of a *malaise* which during the greater part of the twelfth century affected England as a whole.

[1] *John of Glastonbury's Chronicle* (Hearne, ed.), p. 215. But even if it were argued that John's reference is only to Bishop Savaricus and to Robert of Bath (1223–34), the fact still remains that he does not think it impossible that some abbacies should witness a decline in plough-teams while others should stage a recovery. A study of Glastonbury estates will not fail to bring out that, apart from the brief attempt at reform in Robert of Winchester's abbacy (1171–8), the low ebb continued almost uninterrupted until Abbot Michael's accession in 1225.

[2] Very occasionally other surveys also harked back to the good times of Bishop Henry, as in the Shapwick survey of 1189 recording that in Bishop Henry's time there were 320 oxen and also fourteen cows, 200 ewes and three pigs, which are no longer to be found on the manor (*ista modo ibi desunt*): *Liber Henrici de Soliaco*, p. 53.

[3] This complaint is not addressed to historians who form the 'school' of local history and have in recent years made the most important contribution to local study—Mr Hoskins or Mr Finberg. Their 'local' studies appear to be conceived as contributions towards a generalized view of English developments (especially Mr Finberg's recent study of Withington in Gloucestershire: Department of Local History, University College of Leicester, Occasional Paper, no. 8, 1955).

At the time when I wrote my note I did no more than hint at the general conditions and refrained from naming them. I was loth to anticipate the conclusions of my forthcoming book, and above all did not want to give them out without the supporting evidence. Mr Lennard may therefore be forgiven for failing to divine my underlying hypotheses; and I should like now to repair the omission, however sketchily and briefly. In my view economic movement of the twelfth century was uneven and discontinuous. On the whole, population and settlement expanded, especially in the first thirty years of the century and in areas where lands could be reclaimed for peasant settlement. But signs of receding cultivation could often be found even on lands occupied by peasants and were very general on the lord's demesnes, especially after 1130. For the period between 1130 and the closing decade of the century was unpropitious for demesne farming. The disturbed condition of the countryside made it difficult to control from afar the management of detached manors. The unsettlement of the times may also have checked the domestic trade in agricultural produce, for prices appeared to stagnate at their different local levels. The lords were led to adopt the system of indirect management through farmers, but the system was everywhere inimical to expansion (its very purpose was to stabilize revenues), and in most places rapacious or inefficient farming merely worsened the contraction of demesne areas and the dissipation of demesne capital. It was for these reasons that, with the return of settled times and with the revived buoyancy of markets and prices in the thirteenth century, direct management replaced leases to farmers, and agricultural expansion could be resumed on demesnes as well as on the lands occupied by peasants.

If this interpretation is correct—and it is this interpretation which lay behind my reference to general forces in the concluding paragraph of my note—all Mr Lennard has to say about farmers and disturbances is beside the point, and his insistence on local causes is in itself an unfounded generalization.

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TWO PROBLEMS IN THE INTERPRETATION OF THE PORT BOOKS

By J. H. ANDREWS

SINCE they were 'discovered' in 1911 by the Royal Commission on the Public Records, the Port Books have been increasingly used by economic and maritime historians and historical geographers for a variety of purposes, and in particular for the compilation of port statistics of imports and exports. Although historians have shown a general unwillingness to accept the books unquestioningly at their face value,[1] no specific objections have yet been raised to the assumption that they were kept in a sufficiently uniform manner and with sufficient accuracy to serve as a basis for broad comparisons between one port and another or one period and another. In fact, however, figures compiled from the Port Books can be gravely misleading unless careful consideration is given to two questions: first, what kinds of legitimate trade, if any, were deliberately omitted from the record; secondly, how many different harbours or landing places had their trade recorded in any one set of books. These problems may be briefly illustrated by a review of the post-Restoration Port Books of Kent.[2]

The purpose of the books was not to furnish trade or shipping statistics, but to prevent the evasion of customs duty. They formed part of a system whereby the authority of a coast cocquet or *transire* was necessary if goods were to be 'carried forth to the open sea from any port, creek, or member...to be landed at any other place of this realm'.[3] In practice, certain trades appear to have been excluded from this ruling. When a tonnage duty was imposed on coasters in 1694,[4] questions were raised as to the liability of vessels carrying certain commodities or employed on certain routes;[5] exemption was claimed for, among others, the 'faggot hoys from Milton or Faversham or other places thereabouts', and also for the small boats that supplied London with Kentish cherries.[6] Now these trades, whose importance was amply confirmed by Defoe and other contemporary writers, are scarcely mentioned in the whole series of Port Books under review. It seems likely that the fruit and faggot boats were free from both cocquet and *transire* fees, perhaps in consideration of the smallness of their cargoes and the shortness of their voyages, and that their special position in this regard was held to justify their exemption from tonnage duty. Another Kentish commodity wholly ignored by the books was the stone quarried near Maidstone and exported from Rochester. It is interesting to find that substantial shipments of Kentish fruit and stone were listed in some of the paper 'coast books' surviving from the Interregnum.[7] The latter deserve close attention as possibly more comprehensive records of the coasting trade than the Port Books themselves.

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[1] G. N. Clark, *Guide to English Commercial Statistics, 1696–1782* (1938), pp. 52–6.

[2] P.R.O. E. 190/661–728 (Rochester, Milton, Faversham, Sandwich, Dover and, after 1718, Deal), 768–811 (Folkestone, Hythe and New Romney).

[3] 13 & 14 Car. II, c. xi.

[4] 5 & 6 Gul. & Mar. c. xx.

[5] *H. of C. Journals*, XI (1694), 250.

[6] B. M. Hargrave MS. 222, fols. 143–4.

[7] E.g. in the London coast book for 1651, classed as a Port Book (P.R.O. E. 190/46/1); also in P.R.O. E. 122/232/16 (Sandwich, 1652) and E. 122/232/18 (Faversham, 1656).

The bulk of the coasting trade was authorized either by coast cocquets and bonds or by *transires*. The distinction between these two forms of despatch has been described more than once,[1] but its significance in the interpretation of the Port Books has remained unnoticed. Cocquets were required where there was a considerable risk of loss of customs revenue: they were issued for especially large cargoes, for cargoes carried on long voyages, for goods whose exportation was prohibited or heavily taxed, and for goods subject to high duties on import. For commodities of low value, such as slate or stone, carried short distances, a *transire* was usually sufficient. The detailed application of these principles in the late seventeenth and early eighteenth century varied considerably from place to place and from time to time. In the 1670's *transires* were used for corn shipped to London from Sandwich and Faversham, but before the end of the century cocquets had become compulsory,[2] and were being issued even for very small shipments, such as a mere 40 qtrs. of corn sent from Milton to Faversham in 1698. In March 1702 it was enacted that English corn and other goods exportable free of duty could be carried by *transire* between places west of a line passing through the Naze and the North Foreland, i.e. within the outer limits of the port of London.[3] It appears that this Act was subsequently taken to apply to traffic of the same kind between places within the limits of a single outport.[4] By an order of December 1728 all coasters carrying foreign goods on which the duties exceeded one pound were obliged to take out cocquets instead of *transires*.[5] Crouch, in 1732, gave further detailed rules for the authorization of coastwise cargoes, unfortunately without stating for how long they had been in operation.[6]

The significance of these changing regulations lies in the fact that, while goods exported coastwise by cocquet were always recorded in the Port Books, there seems to have been some uncertainty as to whether *transires* should be included. On different occasions it was stated that they need not be listed in the books at all,[7] that they should be entered on separate pages from cocquets,[8] and that they might in certain cases be entered in entirely separate sets of books.[9] In fact, practice varied from port to port. *Transires* appear in the Kent Port Books of the early 1680's, but by 1702 they were quite evidently being omitted,[10] since the passage in that year of the Act regulating the port of London corn trade was immediately followed by the abrupt cessation of entries relating to trade from Rochester, Milton, Faversham and Margate to London in the commodities affected by the Act. After the order of 1728, on the other hand, a considerable coastwise trade in wine, formerly sent by *transire* and therefore not recorded, suddenly appeared in the books. This order, or another of the same period, evidently led to a further change in the recording of coastwise corn, for between 1728 and 1730 the corn trade of the remaining ports of Kent (Sandwich, Deal and Dover) disappeared from the books, and remained unrecorded except for a short period in 1741 when cocquets were temporarily reintroduced. It is easy to mistake the significance of changes of this kind, especially in sample studies of widely-spaced books. Dr Willan, for example, who consulted the Sandwich Port Books for 1684 and 1736, mistakenly concluded that trade had decreased substantially during the intervening period. The decline that he notes in the Essex ports was also illusory,[1] and similar apparent decreases at about the same time in the coastal trade of Cardiff and its creeks and in the traffic from Bristol to Gloucester[2] almost certainly fall into the same category. It seems likely that closer study of the Port Books of other regions will lead to the further revision of Dr Willan's tentative conclusions concerning the changing distribution of the coasting trade.

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[1] N. S. B. Gras, 'Memorandum on the Port Books', in *First Report of the Royal Commission on the Public Records*, Appendix IV (16), Parl. Papers 1912–13, XLIV, 125–7; T. S. Willan, *The English Coasting Trade, 1600–1750* (Manchester, 1938), ch. I.

[2] *H. of C. Journals*, XIII, 756; P.R.O. T. 1/79/24.

[3] 1 Anne, c. xxvi. When the foreign export of corn was prohibited in 1740–1 (14 Geo. II, c. iii) cocquets were reintroduced for the port of London corn trade (Custom House, Colchester: Board's order of 11 July 1740).

[4] Manuscript note in Sir William Musgrave's copy of H. Crouch, *A Complete Guide to the Officers of His Majesty's Customs in the Outports* (1732), p. 11 (B.M. Printed Books, 522, n. 8).

[5] P.R.O. T. 1/278/4.

[6] Crouch, *op. cit.* pp. 16–17.

[7] *Cal. Treas. Bks.* 1679–80, p. 458. It seems, however, that this statement was not included in the final order (*ibid.* p. 457).

[8] *Ibid.* p. 756.

[9] Crouch, *op. cit.* p. 18.

[10] The Kent Port Books do not invariably record the form of despatch used for each cargo. In the absence of individual entries, columns headed 'cocquets inwards', 'cocquets outwards' or 'date of cocquet' cannot be taken to imply that no *transires* are included.

A second problem in the interpretation of the Port Books concerns the definition of ports. The contemporary Customs classification in terms of head ports, members and creeks was clearly described by Crouch (although his list contains many inaccuracies),[3] and has been made familiar by the work of Gras and Hoon.[4] The distribution of the Port Books among the ports was not very closely related to this classification, chiefly because the Court of the Exchequer failed to keep up-to-date with changes in customs administration: no provision was made for many rising ports while at the same time books continued to be issued to places that had long ago lost all their trade. Sometimes the trade of creeks without books of their own was separately specified in the books of the port to which they belonged, but it often happened that the records of several creeks were indiscriminately mixed in the same book; the topographical limits of reference of such books are not readily apparent. Two kinds of evidence are of assistance in tracing these limits: the boundaries of head ports and their members were demarcated in the reports of Exchequer Commissions specially appointed for the purpose, and creeks were grouped with their 'parent' ports in the quarterly Establishment Registers of customs officers.[5] When, as sometimes happens, these sources are in conflict, the limits can only be inferred from such internal evidence as is furnished by the Port Books themselves.

Considered without regard to port limits, the Port Books may give a misleading impression of the geographical distribution of the trade that they record. This is illustrated by Dr Willan's treatment of the coasting trade of south-east England.[6] Taking each set of books in turn, he briefly describes the town and harbour named on the covers, and goes on to summarize the trade listed in the books on the assumption that all this trade belonged to the town and harbour described. Thus such tiny ports as Folkestone, Hythe, New Romney and Winchelsea find a place in his survey, although none of them had as much as a tenth of the trade of Margate or Whitstable, which escape notice altogether because they were included in the books of Sandwich and Faversham respectively.[1]

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[1] Willan, *op. cit.* pp. 136–40. The continued importance of the Kent and Essex ports was shown by figures for 1728 printed in W. Maitland, *The History of London from its Foundation by the Romans to the Present Time* (1739), p. 621.

[2] Willan, *op. cit.* pp. 173, 177.

[3] H. Crouch, *A Complete View of the British Customs* (1724), pp. 247–50. For instances of errors in contemporary published lists of ports see J. H. Andrews, 'The Customs ports of Sussex, 1680–1730', *Sussex Notes and Queries*, XIV (1954), 1–3.

[4] N. S. B. Gras, *The Early English Customs System* (Cambridge, Mass., 1918); E. E. Hoon, *The Organization of the English Customs System, 1696–1786* (New York, 1938).

[5] P.R.O. Customs 18.

[6] Willan, *op. cit.* pp. 137–41, 146–50.

Despite the work of the Exchequer Commissions in defining ports, their limits were liable to change from time to time according to the convenience of customs administration. An apparent migration of trade from one port to another may therefore be due to nothing more than a shift of the boundary between them. After 1735, for example, the trade of Milton appears to have suffered an abrupt decline. This change coincided with three others: a request from the merchants of the Isle of Sheppey for an additional customs officer at Queenborough,[2] the disappearance from the Milton Port Books of ships belonging to Queenborough, and the appearance for the first time in the Rochester books of separate entries relating to the trade of Queenborough. It seems clear that the apparent loss of trade at Milton was due to the fact that the trade of Queenborough was no longer being entered in its Port Books. A case of even greater obscurity had occurred in 1685, when Hythe and Folkestone came within the limits of the port of Dover,[3] itself a member of the head port of Sandwich. For at least another thirty years the Exchequer continued to class Folkestone and Hythe as creeks of the head port of Chichester and to issue them with Port Books that were returned empty because the trade of these places was now being listed in the Dover books.[4] The statement that a blank Port Book constitutes a 'nil return'[5] cannot be accepted in every case.

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[1] For estimates of the trade of Margate and Whitstable see J. H. Andrews, 'The Thanet Seaports, 1650–1750', *Archaeologia Cantiana*, LXVI (1954), 37–44, and 'The Trade of Faversham, 1650–1750', to be published in *Archaeologia Cantiana.*

[2] *Cal. Treas. Bks. & Papers*, 1735–8, p. 69.

[3] *Cal. Treas. Bks.* 1685–9, p. 64.

[4] P.R.O. E. 190/783.

[5] C. H. Jenkinson, *A Manual of Archive Administration* (1937), p. 5.

SCOTTISH COMMERCE AND THE AMERICAN WAR OF INDEPENDENCE

By M. L. ROBERTSON

THE American War of Independence, and the consequent failure of the lucrative colonial trade, set in motion a train of events which were in time to alter the pattern of Scottish economic life. By 1775, Scottish commerce had reached unprecedented heights. From small and insignificant beginnings, a flourishing trade had been built up with America on the basis of the Navigation Acts, from which Scotland had benefited since the Union, and which compelled the colonies to route the bulk of their foreign trade through British ports, instead of shipping directly to and from the markets of Europe. The principal centre of the trade was Glasgow,[1] and the main article of commerce on which it depended was tobacco. By 1775 Scotland's imports from America amounted to 43 per cent of total imports—more than three times as much as from any other single country. Tobacco alone accounted for 38 per cent of the country's imports and 56 per cent of its exports. The trade was mainly a re-export one, as the bulk of the tobacco was sent to France, Holland and other European countries. Glasgow was merely an entrepôt in the trade between America and Europe. Its prosperity depended to a very large extent upon the terms of the Navigation Acts, and was bound to be peculiarly sensitive to changes in the relationship between mother country and colonies. The Declaration of Independence seemed to rock the whole precarious structure of Scottish commerce.

I

The revolt of the colonies automatically meant the repudiation of the Navigation Acts and the end of Glasgow's monopoly of the tobacco trade. Its collapse was spectacular. Imports of tobacco fell from almost 46,000,000 lb. in 1775 to just over 7,000,000 lb. in 1776; and the following year dwindled to a mere 210,000 lb. Total imports from the colonies, which had risen to £540,860 in 1775, dropped to £95,596 in 1776, and still further to £11,277 in 1777. With the main article of commerce rapidly disappearing, re-exports of tobacco to Europe showed a similar reaction. In 1775 these had amounted to 30,000,000 lb., by 1776 they had fallen to 23,000,000 lb., and by the following year to just over 5,000,000 lb. The total value of exports to Europe reflected the movement, falling from £999,145 in 1775 to £449,499 in 1777.[2]

Exports to the colonies had begun to decline even earlier. Through their agents in America, Scottish merchants were kept in close touch with the development of colonial opinion and must have been well aware of the growing threat to their trade.[3] While still importing heavily they began to reduce exports to America and to withdraw from their commitments there. In December 1774, exports were still further curtailed by the enforcement of the non-importation and non-consumption clauses of the Continental Association, and the knowledge that the export of goods from America to Britain might be stopped at any moment.[1] 'There is not the most distant prospect of finding an American freight here,' wrote a Glasgow merchant to a merchant in Whitehaven in April 1775. 'The present unhappy situation of affairs is like to shut up that channel, and our merchants begin to be afraid that the vessels they have lately sent out will be obliged to return empty, or lie in that country till some alteration of affairs is effected....'[2] From 1774 to 1775, while imports were still increasing, the value of total Scottish exports to America fell from £260,033 to £41,637.[3] Merchants, with both fixed and moveable assets in the colonies in the form of warehouses and equipment, stocks of merchandise and unpaid debts, were faced with heavy losses. Glasgow merchants alone claimed to have 'debts due to them by the colonies to the amount of one million and upwards'.[4] All in all, the situation in 1775 seemed to provide little cause for optimism, especially as reports began to come in of American vessels laden with tobacco, rice, and indigo, arriving on the Continent in open infringement of the Navigation Acts.[5]

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[1] For a study of Glasgow's rise to pre-eminence in the colonial trade, see Jacob M. Price, 'The Rise of Glasgow in the Chesapeake Tobacco Trade', *William and Mary Quarterly*, 3rd ser. (April 1954), 179–99.

[2] P.R.O. Customs 14/2.

[3] This awareness is evidenced in correspondence between Alexander Hamilton, a factor in Maryland, and the Glasgow firm of Messrs James Brown & Company. *Mercantile Accounts, Maryland and Virginia*, letters dated 16 May 1775, 30 June 1775 (microfilm of Letter Books in Edinburgh University Library).

As the first shock wore off, however, it became evident that the disappearance of the colonial trade was not occasioning the commercial and industrial distress which might have been expected. In September 1775 the *Caledonian Mercury* reported that 'some gentlemen just arrived from America were much surprised to find the manufactures of this country brisk and the people fully employed and happy'.[6] From 1775 to 1776 total exports of home produced goods rose from £352,484 to £439,229.[7] As this activity continued throughout 1776 and 1777 it became obvious that other factors were mitigating the immediate consequences of the failure of the American trade.

One of the first of these factors was the efficiency with which agents abroad handled the situation in its early stages. September 1775 had finally been announced as the date on which the embargo on exports to Britain would come into force, and as the time drew near feverish efforts were made to collect debts and buy as much tobacco as possible for last shipments home.[8] A Glasgow correspondent of the *Caledonian Mercury* described imports in 1775 as 'extraordinary' and went on to announce that there were 'on hand and in Holland' 20,000 hogsheads of tobacco (which would clear £5 each), and to forecast the arrival of about another 30,000 hogsheads within the next few months.[9] In August 1775 the same paper announced that 'more than half a million of the debts due from America to Glasgow have, by the activity and prudence of the storekeepers, been recovered and sent home in the course of a few months past', and that 'what is owing to this country is now very trifling'.[10]

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[1] The Continental Congress which met at Philadelphia in September 1774 pledged itself to a 'Continental Association' against Great Britain, which forbade the import and consumption of British goods and the export of American goods to Britain.

[2] *Caledonian Mercury*, Edinburgh, 17 April 1775.

[3] P.R.O. Customs 14/1 B–2.

[4] *Caledonian Mercury*, 1 February 1775. In a case before the Court of Session in Edinburgh in 1780, Messrs Speirs, French and Company alone claimed to have over £30,000 sterling in effects tied up in Maryland at the outbreak of war. *Session Papers*, vol. 190 (1780), Signet Library, Edinburgh.

[5] *Caledonian Mercury*, 8 April 1775, 12 April 1775.

[6] *Ibid.* 27 September 1775.

[7] P.R.O. Customs 14/2.

[8] D. I. Fagerstrom, *The Revolutionary Movement in Scottish Opinion, 1763–1783* (Ph.D. Dissertation, University of Edinburgh, 1951), p. 44.

[9] *Caledonian Mercury*, 12 April 1775.

[10] *Ibid.* 19 August 1775.

The war itself, and even before its outbreak the rumours of war, employed many of the ships and men laid idle by the cessation of commerce to transport men and equipment across the Atlantic. Although in November 1775 there was talk of opening a subscription for the relief of seamen in Greenock and Port Glasgow,[1] early in the following year many vessels had been taken into Government service as transports, and others were being got ready.[2]

During 1775 and 1776 there was a growing demand for Scottish goods from England and the Continent, especially Holland. Exports of home-produced goods to Holland rose from £68,673 in 1774 to £78,633 in 1776.[3] In March 1776 it was reported with satisfaction from Glasgow that 'the orders from England and abroad are so very large that it will not be in our power to complete them for three or four months to come'.[4] Demand from the West Indies also increased. From 1775 to 1780 the value of exports of Scottish goods to the West Indies rose from £71,671 to £256,193.[5] West Indian produce was in demand at home, and brought good prices. In March 1776, Alexander Houston & Company of Glasgow wrote cheerfully to their agents in Grenada that 'the prices of West Indian produce seem to advance wonderfully and we begin to entertain hopes that they will be maintained through the year'.[6] Evidently they were, for in February 1777 they reported that 'sugars still keep up and we would fain flatter ourselves that there will be no decline for many months to come'.[7] There was a steady demand, too, from Ireland. Exports of sugar rose from 29,858 cwt. in 1776 to 62,939 cwt. in 1778; and of rum from 25,109 gallons to 141,819 gallons.[8] Shortage of transport vessels began to present a problem. Alexander Houston & Company, in October 1777, had to write urgently to Gordon & Hamilton in Greenock to know how soon they could get vessels 'to carry of our sugars, they are much wanted in Ireland, and it is very hard that they should miss a market for want of vessels'.[9]

Meanwhile, Scottish exports, deprived of their normal channels, began to find alternative routes into America, through Nova Scotia, Newfoundland and Canada. Until 1775, Nova Scotia had provided a negligible market; in 1776 its imports from Scotland amounted to over £45,000. Exports to Canada, which were valued at £4,742 in 1774 rose to £12,822 in 1775. There were loopholes also in the States themselves. The Floridas, East and West, which had hitherto had no trade with Scotland, in 1777 imported Scottish merchandise to the value of £56,516, much of which no doubt found its way into the other states. New York, one of the last to join the Continental Association, imported practically nothing from Scotland in 1775 and 1776; but in 1777 it reappears in trade returns as importing goods to the value of £35,552 and continued to import in increasing quantities during the war.[10]

On the outbreak of war, when it became evident that tobacco was going to be a very scarce commodity, prices rose rapidly. Many merchants who might otherwise have been ruined by the loss of their main article of commerce, now, with warehouses bulging from the heavy importation of 1774–5, found they were making immense profits which in many cases far exceeded their losses in America.[1]

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[1] *Caledonian Mercury*, 18 November 1775.

[2] *Ibid.* 13 January 1776.

[3] P.R.O. Customs 14/1B–2.

[4] *Caledonian Mercury*, 13 March 1776.

[5] P.R.O. Customs 14/2.

[6] Alexander Houston & Company, *Foreign Letter Book E, 1776–8*, 4 March 1776, National Library, Edinburgh.

[7] *Ibid.* 12 February 1777.

[8] P.R.O. Customs 14/2.

[9] Houston Papers, *Home Letter Book No. 2*, 3 October 1777.

[10] P.R.O. Customs 14/2.

These factors fostered economic activity and created a feeling of prosperity throughout 1775 and 1776 which led men to exult that 'it would seem as though the trade to America was not worth the Nation's notice, and made none, or a very trifling difference in the trade of this country'.[2] This feeling was emphasized by the fact that during these years money was very plentiful. The large remittances received from the colonies, and the profits made from the vast stocks of tobacco now selling at such phenomenal prices resulted in a large supply of ready cash which could no longer find employment in trade with America. Idle capital accumulated to such an extent that the banks allowed only 3 per cent interest on money deposited for a full year, and 2½ per cent for six months.[3] In its eagerness to employ its surplus funds, the Royal Bank offered two Glasgow banks a loan of £50,000 at 5 per cent, but, if that were not agreeable, were prepared to accept 4 per cent.[4] The Bank of Scotland in its turn issued an advertisement on 3 May 1775 offering to lend money on heritable security.[5] At this time agricultural improvements were being vigorously prosecuted and it is not surprising that the bank's offer was quickly taken up. In the following year the money market was glutted and loanable capital was more abundant than ever before; according to the *Scots Magazine* there was 'great plenty of money now in the circle...above half a Million Sterling lent out in Edinburgh at three per cent'.[6]

II

These factors, though they might for a time minimize the consequences, could not for long obscure the fact that Scotland's re-export trade, the basis of Glasgow's prosperity, was lost beyond recovery. The colonists, no longer bound by the Navigation Acts, were sending their ships direct to Europe;[7] and the flow of merchandise through Glasgow, from America to Europe and from Europe to America, was almost wholly dried up. Towards the end of 1777 there was every indication of a recession of trade. A poor harvest the previous year was followed by rising prices, and in November the Board of Trustees reported on complaints from many parts of the country of 'an uncommon stagnation in the sale of almost every species of linen'.[8] The entry of France, Spain and Holland into the war transformed the domestic quarrel between mother country and colonies into a struggle between nations for commercial supremacy and territorial gain. In December 1777, Alexander Houston & Company had written to their agents in Tobago: 'The publick affairs of this nation seem to be arrived at a very alarming crisis for, besides the American war, which wears a most gloomy aspect, it seems highly probable that we shall soon be engaged in another with France, the consequences of which may prove very fatal to the commerce of Britain.'[1] Their forebodings were justified. American and French privateers operating from the coasts of France took a heavy toll of merchant shipping; the French fleet sailed for the West Indies and in 1779 captured the British Islands of St Vincent and Grenada; Spain besieged Gibraltar, and Holland gave American ships the freedom of her possessions in the West Indies. Market after market was closed to British merchandise. Trade languished and money became increasingly scarce, especially for merchants engaged in the hazards of foreign trade.

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[1] *Edinburgh Evening Courant*, 4 September 1776, 20 November 1776; George Stewart, *Curiosities of Citizenship in Old Glasgow* (Glasgow, 1881), pp. 22, 194; *Session Papers*, vol. F. 34 (29), 1786. It seems probable that as a whole the tobacco merchants suffered comparatively little immediate loss from the failure of the American trade. The real loss suffered was a long-term one—the loss of the monopoly of the tobacco trade. There is, however, not sufficient evidence available to estimate the extent to which the loss of assets in the colonies at the outbreak of war was offset by the profits made from warehoused tobacco.

[2] *Caledonian Mercury*, 23 August 1775.

[3] *Scots Magazine*, December 1775, XXXVII, 691.

[4] Neil Munro, *The History of the Royal Bank of Scotland, 1727–1927* (Edinburgh, 1928), XI, 145.

[5] *Scots Magazine*, June 1775, XXXVII, 340.

[6] *Ibid.* June 1776, XXXVIII, 393.

[7] On 2 April 1778 the *Glasgow Mercury* carried the information that now that tobacco was being shipped direct from America to France, it was to be landed at Nantes instead of at Morlaix as formerly, and that other commodities would be sent to other ports so that all should benefit from a share of the American trade.

[8] *Report of Commissioners and Trustees for Improveing Fisherys and Manufactures in Scotland, 1777.*

The entry of France into the war precipitated a run on the banks. From April to November 1778, says Sir William Forbes, there was a steady drain of the money lodged on deposit, 'week after week and month after month...'.[2] By August the Edinburgh and London agents of the Dundee Bank were 'under large advances, owing to the decline of trade in general, and the consequent scarcity of London bills, by which funds might be remitted to the Company's Agents'.[3] As trade slackened, goods accumulated in the warehouses for which there was no demand and no outlet. In May 1778 Alexander Houston & Company were again writing to their agents, this time in St Vincent, that they still had cotton on hand unsold, for which there was no demand at any price, that sugar was unsaleable, and that trade was at a complete standstill owing to the great and general scarcity of money.[4] From the middle of 1778 they continually entreated their agents in the West Indies to involve them in no further advances there, but to send them as large remittances as possible. Other firms were in the same straits, and the years 1778–80 saw many failures.[5] Investment in Government loans may have further contributed to the shortage of capital for trade. As the war continued, loans were floated on increasingly attractive terms which must have seemed to offer a safer return at that time than investment in foreign trade. The banks themselves apparently regarded war loans as a profitable outlet for their surplus cash. Sir William Forbes records that in 1778 his bank, which already had considerable sums invested in Navy Bills, Exchequer Bills and Ordnance Debentures, 'went a step further, and ventured to invest some money in the public funds...[which] were at this time at a low price, and there was every probability...that they would rise considerably in value on the return of peace'.[6]

Until the end of the war, Scottish trade showed considerable annual fluctuation. The depression of 1777–8 lifted a little during the two years following and customs returns showed an advance for both exports and imports. The year 1781, however, saw the beginning of another recession, which continued throughout the lengthy peace negotiations of 1782. As these dragged on, the country could take stock of its position. After its total collapse at the outbreak of war, trade with America had picked up again, and showed every sign of increasing still further; but the great re-export trade which had flowed through Glasgow in pre-war days could never be recovered now that America was free to trade direct with Europe. Trade with the West Indies was growing but was still capable of great development. All commerce was hampered by an accumulation of Customs regulations and restrictions badly in need of review. Manufactures suffered from a general lack of fixed standards—of quality, of weight and measurement, etc.—which tended to lower the value of the finished product, and in some cases threatened to damage the high reputation of Scottish merchandise. Glasgow merchants and manufacturers realized that concerted action was needed to foster trade and manufactures, and in 1783 they formed themselves into the first Chamber of Commerce and Manufactures in the country, whose aim was to protect and encourage Scottish trade and manufactures generally, and, as a group, to give assistance to members when necessary in matters regarding trade and manufactures. Two years later a Chamber of Commerce and Manufactures was set up in Edinburgh with a similar object. Both played an important part in consolidating Scottish industry and commerce during the post-war years.

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[1] Houston Papers, *Foreign Letter Book E, 1776–8*, 30 September 1777.

[2] Sir William Forbes, *Memoirs of a Banking House* (Edinburgh, 1860), p. 54.

[3] C. W. Boase, *A Century of Banking in Dundee* (Dundee, 1864), p. 16.

[4] Houston Papers, *Foreign Letter Book F, 1778–81*, 27 May 1778.

[5] *Caledonian Mercury* and *Glasgow Mercury, passim.*

[6] Sir William Forbes, *op. cit.* p. 55.

III

With its great re-export trade gone, the country had to find other outlets for its energies and resources if it wished to regain its pre-war prosperity. One of the obvious ways was by further development of trade with the West Indies. During the war, when direct intercourse with America was impossible, and merchants had to seek alternative markets for their goods, trade with the West Indian islands had increased steadily until affected by the commercial depression of 1780–2. The conclusion of peace saw a general revival of trade. From 1783–5, total imports rose from £1,007,591 to £1,379,476, and total exports from £829,824 to £1,007,636. Trade with America was renewed; imports rose from £37,932 to £121,236, and exports from £169,313 to £263,512. Trade with the West Indies, however, showed a much less pronounced improvement. The trade in tobacco, which had grown up when direct trade with America was no longer possible, now dwindled away to nothing. Total imports rose from £164,848 in 1783 to £288,121 in 1785, but exports continued to decline, from £198,976 to £124,016.[1] It looked for a time as if the West Indies were to be neglected while merchants strove to re-establish their connexions with America.

By 1786, however, the West Indian trade had begun to gather momentum, and by 1790 it exceeded the trade with America. Imports of sugar rose from 106,789 cwt. to 135,367 cwt., and of cotton from 845,953 lb. to the phenomenal figure of 2,723,160 lb. Demand for West Indian produce stimulated exports. Exports of plain linen rose, over the same period, from 917,546 yards to 1,775,465 yards and of printed linen from 67,646 square yards to 883,428 square yards; while re-exports of Irish linen rose from 74,409 yards to 158,007 yards. The value of total exports to the West Indies increased from £139,984 to £318,805, and imports from £235,763 to £371,656.[2]

Expansion of the West Indian trade coincided with a growing interest in Scotland in the manufacture of cotton, which resulted in an increased demand for cotton wool from the islands. In the 1770's, in England, the inventions of Arkwright and Crompton had at last made possible the large-scale manufacture of fine cotton fabrics. This led to the establishment of cotton factories in Lancashire; and soon after the first tentative steps were taken towards a cotton manufacture in Scotland. In 1780 Crompton made his invention public. This must have aroused great interest in Scotland, for the weavers of Glasgow and

[1] P.R.O. Customs 14/4–5.

[2] *Ibid.* Customs 14/5–9.

Paisley especially had long been skilled in the weaving of fine cambrics and gauzes. But the times were not conducive to the active pursuit of new industrial enterprises, and until 1784 there was only spasmodic development in the manufacture of cotton in Scotland. A few mills were built in Renfrewshire and Lanarkshire—at Nielston, Johnston and East Kilbride, in Glasgow itself (North Woodside) and at Stanley in Perthshire. In 1780, James Monteith, an Anderston weaver, experimenting with Indian cotton, spun what was reputed to be the first web of pure cotton in Scotland.[1]

The end of the war released resources and energies to seek other employment, and led to a quickening of interest in this new manufacture. In 1785 the Glasgow Chamber of Commerce petitioned Parliament for the removal of taxes which had been imposed on various kinds of cotton goods.[2] That year marked the beginning of a burst of activity in the manufacture of cotton in Scotland. Arkwright's patent was annulled, and his invention, like Crompton's, was made available for use in Scotland. Cargoes of raw cotton from the West Indies began to arrive in increasing quantities at the Scottish ports. In 1786 the Glasgow Chamber of Commerce urged the Board of Trustees to give financial assistance to spinners who wished to purchase jennies;[3] and the same year saw the establishment of the famous New Lanark Mills, followed by other cotton works at Deanston, Ballindalloch, Blantyre, Catrine and many other places. From 1790 onwards progress was particularly rapid. Mills sprang up wherever water power was available, especially in Lanarkshire and Renfrewshire, where conditions were particularly favourable. Imports of cotton mounted rapidly year by year, from just under 230,000 lb. in 1783 to more than 2,500,000 lb. in 1790;[4] and by 1796 Scotland had thirty-nine water mills, 1,200 jennies, and 600 mules in operation, working a total of 312,000 spindles.[5]

Alongside the manufacture of cotton came developments in related industries. The old cudbear dyes[6] used in the printing and dyeing of silk, wool and linen proved unsuitable for cotton, and George Macintosh, who had pioneered the manufacture of cudbear, now again led the way by experimenting with the production of the elusive 'turkey red'—a dye particularly effective with cotton yarn; in 1785 the first turkey red dye-works in Scotland were established at Barrowfield.[7] The unwieldy bleaching processes of the seventeenth and early eighteenth centuries had gradually been improved upon, but exposure to the sun's rays was still the first essential—a method both slow and cumbersome, and totally inadequate in face of the growing output of both linen and cotton cloth. In 1788 the French chemist, Berthollet, suggested the possibilities of chlorine as a bleaching agent and as a result of his findings practical experiments were undertaken in England and in Scotland, where James Watt in Glasgow and Patrick Copland in Aberdeen were the first to try out the new processes.[8] In 1798 Charles Tennant of Glasgow used chlorine with lime water to manufacture an efficient 'bleach liquor'; and the following year substituted dry hydrate of lime for the lime water and patented a bleaching powder.[9] Work which had hitherto taken months could now be done in a few days, and the bleaching industry entered a new era.

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[1] Stewart, *op. cit.* p. 72.

[2] *Glasgow Chamber of Commerce Minutes*, 2 February 1785.

[3] *Ibid.* 24 January 1786.

[4] P.R.O. Customs 14/4, 14/9.

[5] H. Hamilton, *The Industrial Revolution in Scotland* (Oxford, 1932), VI, 131.

[6] Vegetable dyes extracted from a species of moss.

[7] Stewart, *op. cit.* p. 73; A. and N. Clow, *The Chemical Revolution* (1952), p. 217.

[8] S. J. Higgins, *A History of Bleaching* (1924), pp. 73–80.

[9] *Ibid.* pp. 80–8; A. and N. Clow, *op. cit.* p. 192, gives the credit for the development of the bleaching powder to Tennant's partner, Charles Macintosh.

The men behind the development of the cotton manufacture were for the most part the master weavers of Glasgow and the surrounding district—men like David Dale, the Buchanans, and the Monteiths. Highly-skilled craftsmen themselves, they were usually also dealers in yarn, which they imported from England and from France and Flanders, and distributed amongst the local weavers to be made into cloth. Their knowledge of both the manufacture and marketing of linen made them the natural pioneers in the development of such a similar manufacture, which could be carried on within the existing framework and organization of the linen trade. It is possible, though there is little evidence to support the assumption, that there may have been some financial connexion between the one-time tobacco merchants and the new industrial developments. In the days of the American trade, merchants took an active interest in the manufactures which supplied their cargoes to the colonies. Their names were to be found in the lists of co-partners engaged in the manufacture of leather, glass, and rope, the refining of sugar, the printing and dyeing of linen cloth, and other manufacturing enterprises. Now, with the West Indian trade opening up to supply the raw material for the new manufacture of cotton, and providing a growing market for Scottish goods, their already-existing interest in manufacturing may have been extended to the new industries now making their appearance in Scotland. It is, however, impossible to estimate to what extent capital thrown idle by the failure of the tobacco trade was behind these new developments. Isolated instances can be noted. Robert Dunmore, a former 'Virginia Merchant', became a partner with the Buchanans in the Ballindalloch Cotton Works, having himself built the original mill at Balfron;[1] and in 1791 he seems to have been concerned in an abortive attempt to introduce cotton spinning to the Highlands—a project in which Robert Bogle, another trader, was also interested.[2] The Dunlop family turned from the American trade to the manufacture of iron goods, and founded the Clyde Iron Works in 1786.[3] John Glassford helped to finance the original cudbear works and may have had an interest in the manufacture of turkey red, though there is no evidence of this. In 1792 the West Indian house of Stirling, Gordon & Co., became associated in partnership with the firm of James Finlay & Co.,[4] which in time acquired the three big cotton works at Ballindalloch, Deanston and Catrine, and became one of the biggest manufacturing and trading firms of the country.

Whether or not there was a direct transference of capital and interest from the American tobacco trade into the post-war industrial development, the American War of Independence marked a turning-point in Scottish economic life. Before it, the country had aimed at commercial prosperity through Glasgow's position as entrepôt in the profitable trade between the American colonies and the Continent; manufactures were geared simply to satisfy home demand, and provide the means of carrying on this trade. With the loss of the colonies the basis of this two-way trade disappeared, and Scotland was left with no foreign market for her manufactures save the relatively small demand from England, the Continent, and the West Indies, and no article of commerce capable of creating new markets or of expanding existing ones. Fortunately for Scotland a variety of factors were already in existence which now combined to give a new direction to the country's economy. A long tradition in the weaving of fine linen; abundant water power, especially in the west; the expansion of trade with the West Indies, making available plentiful supplies of raw cotton—these factors, coinciding with the introduction into Scotland of improved spinning machinery and the universal and growing demand for finer and more delicate fabrics, enabled the country to recover, in a remarkably short time, from the disruption of her commerce. The war was not responsible for the growth of the cotton industry, which was so eminently suited to conditions in Scotland that its development could hardly have been prevented. But as long as Glasgow retained its monopoly of the traffic in tobacco with America, manufactures—even the cotton manufacture—would have tended to remain subordinate to trade. The war accelerated the development, for its own sake, of the first of Scotland's great industries, which were to establish the country's economy on more solid foundations and lead to its emergence as a predominantly industrial rather than a predominantly trading nation.

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[1] *Session Papers*, vol. 364 (7), 1795.

[2] Stewart, *op. cit.* pp. 76–81.

[3] *Proceedings of the Regality Club*, 2nd ser. (Glasgow, 1893), 148.

[4] *James Finlay & Company*, 1, 7. A history of the firm published privately (1951).

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ESSAYS IN BIBLIOGRAPHY AND CRITICISM

XXXIII. HECKSCHER'S ECONOMIC HISTORY OF SWEDEN

By RAYMOND CARR

THIS translation of Heckscher's most popular work, *Svenskt arbete och liv*, has been excellently done.[1] Inevitably, the critical apparatus and methodological discussion which make *Sveriges ekonomiska historia* a classic can only be hinted at (e.g. in the discussion of late seventeenth-century population trends and the use of the figures for the *mantalskriven* population). Thus the intellectual fascination of Heckscher's search for quantitative criteria is lost. What we are given is a broad picture of the main lines of Swedish economic development and, given this picture, it is possible to use the graphs and tables of the larger work. There is little discussion of prices in *Svenskt arbete och liv* but there are excellent graphs and tables in *Sveriges ekonomiska historia*.

Heckscher's emphasis is on the primitive and unchanging nature, in quantitative terms, of the Swedish economy up to the nineteenth century: the line between the *ancien régime* and a modern economy 'should perhaps be pushed up to around 1870' (p. 13)—the last of the dear times of the old economy is the Norrland famine of 1860. This natural economy was an open economy with a considerable domestic exchange of goods based on the use of 'intermediate' commodities. In the sixteenth century it produced a well-nourished society dependent on foreign trade only for salt, hops and luxury textiles. It was Heckscher's earlier researches that gave body to Forssell's bold statement that the sixteenth-century peasant was better nourished than his nineteenth century descendant. Gustav Vasa is seen as the perfecter of this system, the great organizer of the self-sufficient Swedish economy. Perhaps Heckscher was led by the satisfactory nature of his sources (Gustav Vasa's letters)—a temptation he never ceased to warn against (e.g. p. 54)—to an excessive valuation of Gustav Vasa's economic grasp: his methods had been used successfully by the Stures. Perhaps, too, he overestimated the rigidity of village conservatism and the static nature of the *ancien régime* (p. 20). In the seventeenth century this conservative village system, in central and southern Sweden, made a revolutionary shift from barley to rye, coming from the east, and to oats from the west. Torsten Lagerstedt has illustrated this revolution from tithe rolls in Södermanland. Between 1600 and 1650 a village could change from 70 per cent barley and 29 per cent rye to 70 per cent rye and 20 per cent barley.[2]

In the seventeenth century this pattern is modified by the demand for foreign exchange to pay troops fighting on the continent. Sweden's position as a great power is explicable in terms of the ease with which Swedish copper could procure foreign exchange on the Amsterdam market. 'Without copper, presumably', says Heckscher, 'Sweden's part in the Thirty Years' War would not have been feasible.' The description of the social stresses of the war, consequent upon the tremendous increase in nobles' land holding, is excellent and the translation surmounts the difficulties of expressing the curiously diffused nature of Swedish conceptions of ownership. It is perhaps fair to point out that the aristocratic conception of the status of the tax peasant gained neither the support of the central government nor of the courts[1] and that sale for cash was in origin a socially neutral motive for crown alienation.[2] To Heckscher the economic significance of the subsequent reduction of crownlands lay in the fact that the characteristics of a natural economy were embodied in public finance where they persisted until Karl XI's military reforms were dismantled in the nineteenth century—though Heckscher's rather extreme views of the consequent rigidity of Caroline budgetary practice was always disputed by Lagerroth.[3] It is characteristic of Heckscher's views to emphasize the purely legal, non-economic nature of seventeenth-century town foundation and the relative resilience of the self-sufficient agricultural community in the stress of war. The population structure of the *ancien régime* continued: short-term fluctuation and long-term stability. Swedish statistics give us the best picture of such a structure (p. 134).

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[1] Eli F. Heckscher, *An Economic History of Sweden*. Translated by Göran Ohlin (Harvard University Press, London: Geoffrey Cumberlege. 1954).

[2] *Sörmlands gräda under den Vasa tiden. Årsbok Sörmlandsbygden* (1940). For the effect of the change on diet see Campbell, Åke, *Äldre Svensk brödkultur* (1943).

In spite of the agrarian reconstruction of the eighteenth century—enclosure and consolidation which brought an increase in production for a growing population, the destruction of the village community and the creation of an enlarged class of rural wage earners (the material of the social problem of the nineteenth century)—Heckscher concludes that the century made 'few definite contributions to Swedish economic and social growth'. He cannot forgive the eighteenth century for its 'technical rather than economic bias'. The fancy activity of manufacturers supported by the government brought a decline in employment in the textile trade and their enterprises were not the foundation of the later industry. Heckscher's dislike of government interference, which runs through all his work, was based on profound scepticism as to its efficacy. There is an excellent description of the restrictive organization of the iron industry and its relation to protective policies.

The nineteenth century sees the transformation of the agrarian economy (only 10 per cent urban population in 1850) into a modern economy with an urban population as large as the rural population. In some spheres this transformation was rapid, the rate of growth of foreign trade 1830–1914, as one would expect, exceeds that of Great Britain. Iron showed remarkable powers of resistance to competition and of technical adaptation, the timber industry grew at an enormous pace with consequent social difficulties in the north. There are interesting points—the lack of British influence in spite of old trade connexions, the effect of mortgage on emigration (p. 258)—but the picture is not as convincing. This is surprising because the period is richer in those quantitative criteria Heckscher always sought as the basis of his writing. Heckscher had a streak of the pure historical imagination about him which even his missionary insistence that the subject matter of economic history was identical with that of economic theory could not entirely suppress.

New College, Oxford

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[1] Cf. G. Wittrock, *Regering och allmoge under Kristinas förmyndare* (1948).

[2] Cf. E. Brännman, *Frälseköpen under Gustav II Adolfs regering* (1950), p. 196 *et seq.*

[3] E.g. in *Statsreglering och finansförvaltning i Sverige* (1928), pp. 144–53. Heckscher's views were put in their most radical form in *Ekonomi och historia.*

REVIEWS

GENERAL

ROBERT SCHNERB. *Le XIX siècle. L'apogée de l'expansion européenne (1815–1914).* Vol. VI of Histoire Générale des Civilisations. (Paris: Presses Universitaires de France. 1955. Pp. 627.)

The French belief that history can be presented to a wider public than the scholar's without sacrificing the scholar's attitude has rarely been put to a more searching test than in the series edited by Maurice Crouzet of which this is the penultimate volume. To compare it with Lavisse and Rambaud or even with Halphen and Sagnac is to see how far the dominant interests of the historian have shifted over the generations. Economic and social history, and cultural history, are not now mere embellishments of the main political narrative; they are the central theme. And the reader finds not the genealogical tables and political maps that made up the austere illustrations of general historical works in the past but a lavish use of tables, graphs and maps of all kinds as well as excellent reproductions of contemporary works of art carefully selected for the light they throw on different aspects of the period. A chronology at the end, a reasonable index, and a full table of contents, all serve to guide the reader through a long and intricate work. Such guidance is the more necessary since M. Schnerb has taken to heart what most of us only preach, namely that the historical world of modern times cannot be limited to Europe, or even to Europe and its direct impact on 'overseas'. A real attempt has been made to deal with Africa, Asia, Oceania and Latin America in their own right as actors in the world scene, and not merely as the recipients of external impulses. Perhaps the only criticism might be that (unlike those of both the other series mentioned) the bibliography is almost exclusively restricted to works in French; and where the English-speaking world is concerned this must necessarily lead to some rather curious results.

To criticize M. Schnerb in detail would demand a range of interest equal to his own; the present reviewer can only say that where he touches upon fields with which he is concerned, the treatment is more than adequate; one very minor irritation is M. Schnerb's habit of using an English word for typical English or American institutions or concepts, and frequently getting it slightly wrong. Once or twice the almost inevitable practice of illustrating intellectual trends by lists of names leads to an apparent violence to chronology.

Despite the bibliography, M. Schnerb's work gives no evidence of national bias, indeed if a bias can be detected at all, it would be the present fashionable one of 'anti-colonialism'. On his own showing of the previous state of many parts of the world subjected to European rule in this period and on the demographic evidence which he himself provides, some of the strictures about imperialism might well seem too severe. But this is only worth saying because by raising the question of criteria it leads into the kind of consideration which a historical treatment of this kind inevitably arouses in the reader's mind. While admitting that it would be difficult to think of any work one would more readily present, for instance, to an undergraduate beginning nineteenth-century history as indicating the kind of issues and problems that arose during that period, one is less certain that one would be providing him with the means for handling them. In other words, in a treatment of this kind which illustrates the process of change without attempting to explain it, and which treats policies as though they were determined by circumstance, the writer must inevitably fall into some kind of determinist pattern. We are certainly far from the crudities of Marxism, but it is not so clear what M. Schnerb would put in its place. Judging by the arrangement of the chapters of the several parts into which the work is chronologically divided, he attaches primary importance to movements in population and prices. Demography and the business cycle are perhaps his determinates; but a case could be made for scientific advance and its technological consequences. It looks as though the attempt to use civilizations as the units of historical study is going to raise some important problems of theory and method which those who are devoting themselves to this attempt have not yet formulated.

MAX BELOFF

Nuffield College, Oxford

J. H. MUNDY, R. W. EMERY and B. N. NELSON. *Essays in Medieval Life and Thought.* (Columbia University Press. London: Geoffrey Cumberlege. 1955. Pp. xviii+258. 32*s.*)

These essays were presented to Austin P. Evans by a number of his former students and they reflect Professor Evans's own wide interests in medieval studies. The book is divided into three parts: religion and heresy, science and thought, and institutional and local history, with four, five and five articles respectively. Some of them are primarily publications of documents with short introductions; others are full-scale essays; in all of them the standard of scholarship is most impressive. Several articles are of special interest to economic historians. Charles Trinkhaus, in 'The Religious Foundations of Luther's Social Views', shows that Luther's attitude towards economic life, though sometimes contradictory on specific issues, was fundamentally consistent with his attitude towards faith as the only thing that really mattered to the Christian: the activities of the world could not taint him; on the other hand, the worldly could equally concentrate on their own interest, for no practice of moral constraint without faith would help them towards salvation. Richard W. Emery, in 'Flemish Cloth and Flemish Merchants in Perpignan in the Thirteenth Century' shows from the national registers of Perpignan that from 1261, and probably much earlier, there was a lively overland trade in cloth from Flanders to Pernignan from where it was distributed to Aragon and Catalonia. The merchants of the small town of Saint Antonin played a particularly important role in this hitherto unknown trade. Sister Mary Ambrose (Mulholland) publishes the statutes on cloth-making in Toulouse in 1227. In her introduction she shows that it was the municipal officials who exercised effective control over the crafts. Finally, Peter Riesenberg, in 'Roman Law, Renunciations, and Business in the Twelfth and Thirteenth Centuries', discusses the importance in the development of the commercial economy of northern Italy and southern France, of the practice of renouncing the various safeguards which the Roman law of contract provided for women, children and other 'weak' parties.

H. G. KOENIGSBERGER

University of Manchester

Hans Nabholz. *Ausgewählte Aufsätze zur Wirtschaftsgeschichte.* (Schulthess & Co. AG. Zurich, 1954. Pp. 207. Fr. 12.50.)

The selected essays of this distinguished Swiss scholar include one that will be familiar to English readers, his article on later medieval agrarian society, reprinted here in German translation from the *Cambridge Economic History of Europe*, vol. I. The others range widely over Swiss and European history and were originally published at various dates between 1913 and 1950. One, on the origins of the medieval town, deals with the historiography of the subject, mainly in Germany, from the early preoccupation with the town as a factor of constitutional history to the more economic approach of Pirenne and Planitz. There are three essays on later medieval Swiss history. One deals with the political and economic objects of the leagues of towns and cantons in the thirteenth and fourteenth centuries. Another sets out the evidence for the earlier development of lending and exchange operations, chiefly by Jews and Italians, in medieval Zürich. The third is an interesting approach to the problem of the causes of the Peasants' War of 1525 by a detailed investigation of the rise of peasant unrest in the areas under the lordship of Zürich. There are also three shorter essays dealing with more modern subjects: one on the currency problems and policies of the Swiss confederation during the Thirty Years War; one about the relationship between social and philosophical discontent at the beginning of the French Revolution; and one on the economic aspects of the creation of the Swiss federal state in 1848. The recurring preoccupation with the theoretical problem of the relationship between economics and politics in history is given full rein in a preliminary essay which is the least satisfactory in the book. Another recurring feature that jars is the author's tendency to use the unexplained rise of the money economy as an explanation. But all the essays except the first contain much that is interesting and valuable.

St Catherine's Society, Oxford G. A. Holmes

Milton Gilbert and Richard Stone (eds.). *Income and Wealth*, Series IV. International Association for Research in Income and Wealth. (Bowes and Bowes. Pp. xii + 386. 42*s*.)

This volume brings together some of the papers presented at the third Conference of the International Association for Research in Income and Wealth at Castelgandolfo, Italy, in 1953. The first three papers all discuss various kinds of models of the whole economic system. Professor Frisch describes the 'decision-model' evolved in Norway; Professor Stone ranges widely over the whole field of social accounts and model building, Messrs Schouten and Lips draw on Dutch experience in their exposition. All three of these papers are of a theoretical nature. The next three papers deal with problems of comparing national incomes or products in real terms. That by Gilbert and Kravis is concerned with the statistical estimation of international comparisons primarily from the expenditure side. Paige and Adler cover the same field but approach it from the value-added side. Nicholson's thoughtful paper is concerned with the more fundamental analytical problems at stake. Next come two papers on National Income estimation and usage in planned economies. Marezewski's approach (in French with English summary) is entirely theoretical. Jackson attempts to summarize both the principles and practices of Eastern European statisticians.

Then come two unconnected papers. Stuvel contributes a long paper on 'The Use of National Accounts in Economic Analysis'. Finally, Goldsmith argues fervently for the development of National Balance Sheets as companions to National Income data. The above summary will show that there is relatively little in this volume which will be of direct and immediate use to economic historians. (The forthcoming vol. v promises to be much more relevant.) However, a great deal can be learned by everyone about the nature, methods and contribution of statistical data. Fuller realization of the background may at least be a warning against over-hasty generalization from the foreground.

A. R. Prest

Christ's College, Cambridge

UNITED KINGDOM

G. H. Martin. *The Early Court Rolls of the Borough of Ipswich.* (Univ. College of Leicester Department of Local History, Occasional Papers no. 5. 1954. Pp. 44. 6*s*.)

In a relatively brief essay Mr Martin covers a very great deal of ground. He discusses first the compilation and contents of the custumal of Ipswich, the original nucleus of which was provided by the verdict of twenty-four of the better-advised men of the town in 1290–1. Their findings, added to in the early fourteenth century, constitute the core of the collection known as the Little Domesday of Ipswich. One important item in this collection is, of course, the well-known account of the proceedings of the townsmen on the receipt of King John's charter to the town in 1200. Mr Martin then proceeds to a discussion of the courts of the town, showing the way in which business originally done in a single court spilled over into new tribunals with a consequent increase in the complexity of the records. Finally he undertakes a comparison between the records of Ipswich and those of certain other East Anglian boroughs (Colchester, Yarmouth, Norwich), underlining some notable differences arising from their differing intrinsic characteristics and the differing problems with which their governments were faced. This programme may be somewhat ambitious for an essay of these dimensions. Compression leads to moments of obscurity, and inevitably certain propositions have to be left in the air for lack of detailed exposition. The suggestion, for example, that the habit of keeping a separate roll of 'recognizances' of the sale of free tenements in the borough led to the institution of a 'Petty Court of Recognizances' is one we would like to see more conclusively proven, for we would more readily expect the emergence of the court to produce the record rather than the reverse. None the less, this paper is full of interesting suggestions and we may hope it presages a more extensive treatment in the not too distant future of the history of Ipswich and the other towns of East Anglia. For a nation of shopkeepers we have shamefully neglected the history of our towns, and it is heartening to find that there are those who are seeking to repair this neglect.

Edward Miller

St John's College, Cambridge

A. R. Bridbury. *England and the Salt Trade in the Later Middle Ages.* (Oxford: Clarendon Press. 1955. Pp. 198. 21*s.*)

Salt has always been important as a condiment, but it was an absolute essential in the Middle Ages, when so large a proportion of the people's food consisted of salted fish and meat. So far as England is concerned the native sources were the brine springs of the Droitwich district and the coastal saltpans. Of the springs, which produced the 'fine' and 'small' salt, Dr Bridbury has little to say; statistics of production are non-existent; and he does not refer, either in his chapter on 'Distribution in England' or in his twelve-page bibliography, to F. T. S. Houghton, 'Salt Ways' (*Birm. Arch. Soc.* LIV, 1–17). Of the coastal saltpans he gives a good historical summary from the time of the Domesday Survey, when their chief concentrations were in Sussex, Norfolk and Lincolnshire, where there was an abundance of fuel—wood in Sussex and peat in Lincolnshire—for boiling the sea-water after its preliminary concentration by evaporation by sun and wind. Down to the middle of the fourteenth century England exported more salt than she imported; but then, as Dr Bridbury points out, the development of the English cloth trade in the eastern counties attracted labour from the unpleasant and unrewarding task of salt-making; and England became dependent on foreign supplies. These came mainly from the Low Countries, where a good quality salt was made from sea-saturated peat, and from the west coast of France and Portugal, but particularly round the mouth of the Loire and the Bay of Bourgneuf. The great importance of the trade in this coarse 'Bay salt' is well brought out from a mass of statistics, ordinances and trade agreements—and disagreements, down to the last years of the fifteenth century. There are useful appendices of tables of annual Exports and Imports, Weights and Measures, and Prices.

L. F. Salzman

Elisabeth G. Kimball (ed.). *Some Sessions of the Peace in Lincolnshire, 1381–1396,* vol. I. (Lincoln Record Society Publications vol. 49, 1953. Pp. lxvi + 110.)

In 1936 the Lincoln Record Society printed certain peace rolls for the county for the years 1360–75. The current publication of the Society continues this work, and contains peace rolls for the Parts of Kesteven for the years 1392–6 and for the Parts of Holland for the years 1387–96. A forthcoming volume will contain similar records for Lindsey; and a useful introduction covering all three parts of the county prefaces the volume under review. The editing is of the high standard we expect of the Society; and the information yielded by the rolls to the social and economic historian adds to the mounting debt we all owe to Professor B. H. Putnam and those she inspired to carry on the work which she began. Much of the information, of course, is highly miscellaneous and needs supplementation from the evidence of other types of record before it becomes truly meaningful. There are in these rolls, however, some scattered price data, some evidence for the distribution of the cloth industry and of other crafts and craftsmen, some hints about the personal possessions of divers sorts of men. They also leave us with the picture of an age in which 'common waylayers and insurgents against the people and the king's peace' were far from uncommon, which is perhaps something which economic historians ought to remember. Two other features of Lincolnshire at this time are more clearly documented. The first is the contrast between upland Kesteven and the marshy parts of Holland, where the maintenance of dykes and ditches was a constant preoccupation; where the fisherman is prominent, blocking the inland waters with his nets and eel-traps and possessing stocks of eels, pike, perch and roach which attracted thieves in the night; and where cattle were pastured in considerable numbers on the common fens. The other is the problem of labour. There are many presentments of labourers who have left their service before their contract has expired, who have left their villages (particularly in harvest time) for higher wages, and who have in fact been receiving wages higher than those laid down by the labour laws. Employers too, both in town and country, were arraigned for the shifts the scramble of labour made necessary. The abbot of Newbo was accused of paying a ploughman too high wages and too many perquisites in kind (including seven gallons of ale a week). The peace rolls are quite indispensable for understanding the dimensions of the labour problem of these times.

EDWARD MILLER

St John's College, Cambridge

J. S. ROSKELL. *The Commons in the Parliament of 1422.* English Society and Parliamentary Representation under the Lancastrians. (Manchester University Press. 1954. Pp. xii+266. 30*s*.)

The parliament of 1422 was summoned to deal with the political and constitutional problems created by the early death of Henry V and the prospect of a Royal minority that might last for a whole generation. Professor Roskell seeks to determine the political role of the Commons in this parliament and to assess their capacity for 'some measure of independent collective action'. The Commons' own journals do not begin until 1547 and there is no record of the discussions of the knights and burgesses: the author observes that (p. 107) 'We cannot say for sure what position it was that the Commons in parliament took up in this crisis of 1422'. But the most significant feature of the proceedings was the readiness of the Commons to follow the lead given by a group of the more influential lords and to acquiesce in a constitutional settlement that established a baronial oligarchy to rule England.

Professor Roskell offers the first detailed study of all the Commons in a single medieval parliament and he regards the members in 1422 as constituting 'as fine an array of political talent and experience as perhaps any Lancastrian parliament was to witness'. This view is supported by brief lives of all the shire-knights and seventy-five of the 188 burgesses which fill nearly a hundred pages: if some of the latter are necessarily somewhat meagre, the biographies of the shire-knights are lengthy and valuable. Most members were men of more than local importance: among the shire-knights were some who could rank with the lesser baronage in landed wealth and many members were well qualified by reason of administrative ability and political experience, both in local government and in previous parliaments. These were not a subservient body of men and there is no reason to think that they were coerced into accepting the form of government devised to defeat the ambitions of Duke Humphrey of Gloucester. In particular there is no direct indication of aristocratic pressure exercised on the elections in the shire courts—indeed do the activities of this parliament suggest that such intervention was necessary? For in 1422 'aristocratic aims and public opinion coincided' and, in view of the close ties of kinship, service and self-interest that united so many of the Commons with the lords, it would have been surprising had events proved otherwise. Lawyers formed no less than between a fifth and a quarter of the House and they were likely to be responsive to the needs of their many aristocratic patrons. Twenty out of the seventy-four knights of the shire were lawyers and 'all...not at that time employed in the service of the Crown were either then or later in the fee of one or even more than one of the great baronial families'. Most of the lawyers in parliament sat as burgesses and the breaking down of the demarcation between shire and borough representation reveals the Commons as less divided in social composition than was hitherto believed. Already in 1422, 36 per cent of the borough representatives were not true burgesses (in the sense of being resident in conformity with the statute of 1413) and the 'revolution' in the character of borough representation is shown to have been well in progress in the first half of Henry VI's reign.

Constitutionally and administratively the work of this parliament was of great importance, yet it was (p. 124) 'above all unspectacular in its political results especially where the Commons were concerned'. What was missed in 1422 was a most important opportunity of securing some degree of constitutional control by the Commons over the Council that was to rule in Henry VI's name. As a result (p. 109) 'The large measure of political initiative held by the Commons in the Good Parliament of 1376, during the early years of Richard II's reign, and again in the first part of Henry IV's, was lost by default in 1422 for more than two centuries'. This last opinion is difficult to accept: 'the winning of the initiative' by the House of Commons is generally held to have begun in Elizabeth I's reign, and a fuller statement is needed of the significance of the events of 1422 in the development of parliament during the fifteenth century. At least in the later years of Henry VI's reign the Commons showed themselves capable of *some* measure of political initiative: in the impeachment of Suffolk in 1450, and in their insistence on Duke Richard of York's nomination as Lord Protector in 1455, the Commons were acting without the support of the majority of the lords.

No doubt the members of the Commons in 1422 were typical of the personnel of fifteenth-century parliaments. It was the situation confronting them that was exceptional and indeed unique: the most vigorous of the rulers of late-medieval England was succeeded by a baby nine months old and if the infant Henry VI survived to manhood (as unfortunately he did), the personal exercise of the Royal authority would remain suspended for some twenty years. Now since the Lancastrian usurpation of 1399 the 'affinity' of the Crown had been more powerful than that of any magnate and it was profoundly important that the king's death left the Royal 'affinity' leaderless in 1422. Members of the Royal household were almost completely absent from the Commons—and had that been so in the parliaments of Henry V? Experienced and substantial as the lower House might be, it did not, in such a crisis as this, constitute a political force independent of the lords. Once Henry V was dead the Council assumed unopposed the task of ruling the realm, and the councillors appointed in December 1422 had extensive connexions in the Commons through their kinsmen, retainers and followers—the Earl of Warwick seems to have been the most influential in this respect. In 1422 the magnates were united in opposing the pretensions of Duke Humphrey of Gloucester and these links with the aristocracy no doubt enabled the lords to win the support of the majority of the Commons. Perhaps some members took a significant part that remains concealed, for, as Professor Roskell reminds us, we do not know the contribution that some of these councillors and retainers may have made to the formulation of baronial policy. But it was the lords who filled the political void left by the death of Henry V and provided leadership in this parliament. Never did the nobility possess a greater or more direct share of political power than it won in Henry VI's reign and what we need now is a similar study of the lords in the parliament of 1422.

T. B. Pugh

The University of Southampton

A. L. Merson (ed.). *The Third Book of Remembrance of Southampton 1514–1602.* Vol. ii (1540–73). (Southampton Records Series. Vol. iii. 1955. 25*s*.)

There are three series of Remembrance Books extant at Southampton. The first, edited by H. W. Gidden, is already in print; the second still awaits its editor; the third, to be published in three volumes, has now reached its second volume. All three books began as formal records of some aspects of town finances; all dwindled in importance or came to an end when the town made separate provision for the recording of these matters. The first Book was partly superseded by a Book of Fines; the second duplicated the Stewards Book and failed to survive; and the third, which began in 1514 as a record of the town's fee farm and of debts due to the town, lost its financial significance in 1525 when the town started a Book of Debts. Hence, as Mr Merson says, these Remembrance Books are not so much formal records of an office or an institution as 'note-books for occasional, exceptional, and even casual entries' by the Town Clerk. Accordingly, the volume under review contains records of leases, of appointments to minor town offices, of regulations and salaries, and of such desultory memoranda as a Town Clerk might be expected to make for his own convenience. In addition to the text, Mr Merson has provided three appendices, one consisting of a list of annually elected town officers (1547–74); a second giving a schedule of town creditors in the 1560's together with the sums due to them; and a third dealing with two documents relating to the building of the new Market House in 1570.

The editing is so good that this reviewer found himself consulting the voluminous notes and using the excellent index more eagerly than he scanned the text. Mr Merson knows too much about Southampton and Southampton people to be allowed to deprive us of the history of the town that this piece of editing shows him to be admirably equipped to write.

A. R. Bridbury

London School of Economics

Barbara Winchester. *Tudor Family Portrait.* (Jonathan Cape. 1955. Pp. 330. 25*s*.)

This book is based on the correspondence and accounts of John Johnson, merchant of the Staple, preserved among the State Papers and including nearly a thousand letters for the period 1542–52. The son of a Calais merchant, John was apprenticed to the rich stapler, Anthony Cave, and married his niece. By 1542 he and his brother Otwell had entered into partnership with Cave, and the firm of Johnson and Company had established their headquarters in Lime Street. Apparently they were fairly successful until 1551, when Otwell died of the sweating-sickness and the firm sank into financial difficulties, ending in bankruptcy in 1553. Miss Winchester has presented a vivid picture of the Johnson family, their personalities and the details of their daily lives. She has written, however, for the general reader. Her narrative and descriptive method, successful in portraying the domestic and social scene, fails to do justice to her material on commercial affairs. She has been content merely to describe the firm's export of wool and some of its ventures in other commodities. Economic historians would gladly exchange her discursive descriptions of social background for an analytical account of the firm's organization and trade, and to learn something of the scale of its business and profits, and its credit structure. Since Miss Winchester has not concerned herself much with such questions, she does not account adequately for the bankruptcy. Yet John Johnson's failure deserves careful examination; for we see him leasing property in Northamptonshire, becoming impropriator, wool grower, gentleman farmer, until it seems but a short step to the purchase of an estate and the founding of a line of country gentry. Undoubtedly the firm's fortunes were largely determined by personal factors, and the death of Otwell, the ablest partner, was the chief cause of its ruin. The calling-down of the coinage in 1551, which Miss Winchester describes as devaluation, dealt it a severe blow. Here, as with several other historical facts, she errs. It is sad that the complete edition of the letters has not been published; for without it, this is a tantalizing book.

MARY FINCH

ROYAL TYLER (ed.). *Calendar of State Papers, Spanish*, vol. xiii, 1554–8. (H.M.S.O. 1954. Pp. xxvii+482. 84*s*.)

This volume will be of value primarily to political, military and diplomatic historians; but there is a good deal here of lively concern to students of economic history. What stands out is the desperate financial condition of Philip's government. De Silva's bitter reproach against the English, that they love money more intensely than does any nation (p. 6), has an unintended irony as succeeding pages show Philip's own government grinding to a standstill as it runs out of cash. By 1555 we have the prophetic report coming from Antwerp: 'If the Spanish troops were to mutiny they would abandon the fort and loot the neighbourhood; and if it were attempted to stop them God knows how far they might not go.' With his annual rate of interest exceeding 40 per cent, the king had no choice but to bring in his new dominion of England to carry some of the heavy burdens of war, while two lengthy lists of English pensioners (most of them unpaid) supply a commentary upon the difference between Philip's intentions and his capacity. 'Several lords', Feria tells Philip, 'have spoken to me about the pensions...pressing me...barefacedly.' The English queen expressed herself as well satisfied with the Parliamentary grant of 1558 but to the Spaniard it is 'very little, considering the needs, and I have told her so' (pp. 355–6). The Hanseatic towns figure a good deal in these papers; there is also a useful list of them, probably drawn up in the year 1558 (p. 393). For the period shortly after the death of Mary, there is a most interesting 'Memorandum of the jewels that lie in a coffer at Whitehall', annotated by Philip II himself. The editor is to be congratulated on the manner in which he has made available to historians the rich and varied sources for a critical phase in English and European history. A solitary cause for regret is that the 'General Index' turns out to be, in keeping with other volumes in this series, mainly an index of names and places—not subjects. For the economic historian there is, for example, no short cut to what there is to be found under wool, loans, interest or taxation.

University College, London J. HURSTFIELD

G. D. Ramsay (ed.). *Two Sixteenth-Century Taxation Lists, 1545 and 1576*. (Wilts. Arch. and Nat. Hist. Soc. Records Branch, vol. x. Devizes. 1954. Pp. 242.)

The first of these documents deals with the benevolence or forced contribution exacted without parliamentary sanction by Henry VIII from the reasonably well-to-do in 1545; the second with the regular lay subsidy of 1576. In each case the names of the taxpayers, assessments where available and sums paid, are printed without undue abbreviation. The production is excellent and the volume, which is comprehensively indexed, might well serve as a model for such Local Record Societies as can afford the cost. In his introduction the editor deals briefly with the national events leading up to the imposition of the two taxes and with the local administrative procedure used in their collection. He also draws attention to many points of sociological and topographical interest, such as the striking proportion of both levies which was provided, in the north-western part of the county, by textile employers ('clothmen' or 'clothiers'), and the number of well-to-do priests who were living in the Close at Salisbury in 1545 (the benevolence did not exclude the clergy). What is perhaps not sufficiently emphasized is the evidence of fairly extensive migration among the population during the thirty years concerned. These two lists will be of value to the economic historian, but as they both deal with only the upper stratum of society it might have been preferable (finance, and the necessary documents permitting) for one of them to have analysed the much more extensive subsidy of 1524. As the Editor points out, the question of the incidence of direct taxation in Tudor England is a difficult one on which we need more information, and published lists for Suffolk suggest that in the subsidy of 1524 the assessments, which touched both rich and poor alike, more nearly represented the wealth of the taxpayers than did those of the subsidy of 1568, which was similar to that of 1575.

M. C. Chibnall

Girton College, Cambridge

M. E. James (ed.). *Estate Accounts of the Earls of Northumberland 1562–1637*. (Surtees Society Publications, vol. clxiii (for 1948) Durham and London. 1955. Pp. lv+254.)

This publication promised well, because the accounts in question are unusually complete and relate chiefly to the north-eastern lowlands, so shedding light on the peculiar history of the only district to experience that general clearance of estates that is sometimes regarded as the agrarian problem of the sixteenth century. The text, itself of wide and compelling interest, is prefaced by an introduction that not only performs the essential function of exposing the diplomatic of estate accounting but has long discussions of the activities and fortunes of successive earls, digesting much of the matter contained in the text. These discussions are based on the accounts, on a wider range of Syon House manuscripts and on other sources. They could, however, have been somewhat improved by further reference to other manuscripts, especially the manorial surveys of this collection, and even to the *Northumberland County History* and earlier Surtees Society volumes. It is imprecise to say that earlier surveyors relied largely on hearsay and tradition and no relation is disclosed between the introduction of admeasurement and contemporary divisions and enclosures. The assumption that bailiffs were illiterate seems hardly to be warranted, and the difference between manors and lordships is misunderstood. There is also a curiously innocent and circumlocutory reference to inland bills of exchange. The index is unfortunately confined to persons and places and here usual modern spelling has not been uniformly adopted. Latin originals have been translated, though incompletely, and the editor was fortunate enough to have had no difficulty in this task sufficient to render necessary any textual footnotes, but the English have been largely abstracted, with occasional reversions to transcription, the purpose of which is not always immediately apparent. What is perhaps most disconcerting is the insufficiently clear distinction between abstracts, translations and transcripts. To aim at both diplomatic reproduction and historical analysis is to court the dangers of falling between two stools, and useful as this volume is, it can hardly claim complete success in either diplomatic reproduction, diplomatic exposition or historical analysis. ERIC KERRIDGE

University of Liverpool

ALLEN FRENCH. *Charles I and the Puritan Upheaval: a Study of the Causes of the Great Migration.* (Allen and Unwin. 1955. Pp. 436. 30*s*.)

This book is about the conditions and events in England that led to the Puritan emigration to New England, 1630–40. This is not just a good subject for Yankee ancestor-worshippers, for properly investigated it would illuminate English social history. The only good books on it are old and Bostonian, and not so well known in England. Unhappily the present book, while interesting enough to the general reader in America, will not help the English scholar. For him, it tries to do too much and accordingly manages to do nothing really well. He will not need to look here for the political history of the reign of Charles I; and if he wants a summary of the social conditions of the time, he will get far more adequate ones in Rowse and Notestein. Indeed the author seems not to have read the rich, if confusing, literature on social history piled up around Tawney's *Rise of the Gentry*.

To provide an adequate understanding of the great emigration, a book would have to go into details and establish connexions, particularly local details and connexions, which this book stops just short of. For instance, it describes, inadequately, the clothing industry and the crisis in trade provoked by the Thirty Years War. It only just mentions the chief places of origin of the emigrants. And it altogether fails to make the connexion between the two: that the clothing districts tended to be Puritan, though Richard Baxter had seen it three hundred years ago. Therefore the book cannot even ask such important questions as why the clothing districts should be Puritan, nor trace convincingly the networks of personal influence among small gentlemen, parsons, tradesmen, farmers, Cambridge dons, and merchants of London that made possible in East Anglia and the West Country the organization of what came close to being an underground movement. The Puritan emigration was an extraordinary thing: the first modern, large-scale, European, overseas colonization. Taking at least 20,000 persons 3,000 miles across the ocean to a wilderness in so few years and in those conditions was a big effort, but the job of understanding it has yet to be done.

One thing, indeed, this book does well. If anyone ever doubted—and J. T. Adams and others certainly tried to make us doubt—that the motives of the emigrants were just what they said they were: religious, the doubts are laid at rest. Certainly simple poverty did not drive people out of England, for the really poor could not afford to pay for passage, freight, and the year-and-a-half supply of food needed before they could clear land and get a crop in New England. Even for those who had some capital, it is doubtful that so great a movement could have been sustained by any force less powerful than faith. This book wisely does not try to make the relations between religion and economics look simple.

George C. Homans

Harvard

Brian Frith (ed.). *Gloucestershire Marriage Allegations 1637–1680.* General Editor of the Series—Patrick McGrath. (Printed for the Records Section of the Bristol and Gloucestershire Arch. Soc. 1954. Pp. 281. 25*s*.)

'The value of marriage allegations to the genealogist cannot be overstressed', says the Editor in his Introduction; and in his Notes on the History of Marriage Licences which follow, Mr McGrath points out that the 'marriage licence clearly fulfilled a social need' since it was practised by rich and poor. Though the editors of this admirably produced volume are not aware of it, they are themselves supplying an urgent need of economic historians and demographers since their volume provides valuable data on the obscure subject of the marriage customs of pre-industrial England.

It is interesting to find convocation defending marriage by special licence in 1597 against Puritan criticisms on the grounds that 'consent in marriage is the matter specially to be regarded, and credit of kindred, honour, wealth, contentment and pleasure of friends be rather matters of conveniency than necessity in matrimony'. Also, they note that 'divers times men of honourable degree have a liking of mean persons. So sometimes rich have of poor, and old of young, masters and mistresses of servants, and to conclude, superiors of inferiors. All of which will willinglier marry secretly, than make public declaration before hand.' And for these, and other reasons, there were men and women of all ranks who preferred a quick and quiet wedding to the delay and publicity of marriage by banns.

Of the 4,643 bridegrooms in Gloucestershire who took this way to the altar between 1637 and 1680, 1,948 were yeomen; 586 were gentlemen; 328 were husbandmen; 200 were tailors. Apparently the labourers were less reticent in the matter of their matrimonial intentions, for only seven were married by licence. Since we have the ages of a large number of brides and bridegrooms, an analysis by occupational groups, though not, unfortunately, of the labourers, can be made with the following highly summarized results:

	Gentlemen	Wives	Yeomen	Wives	Husbandmen	Wives	Skilled workmen	Wives
No. of cases	344	293	1390	1192	190	166	331	279
Median age at marriage	25–6	22	27–8	24–5	24–30	25–8	24–6	22–3

It will be seen that the skilled workmen are the first to be lured to the altar; husbandmen are the last and yeomen only slightly less resisting, and gentlemen are running the skilled workmen close as the least laggard in love. What is more interesting, the husbandmen and the yeomen choose older wives by two or three years than the wives of gentlemen and skilled workers.

It would be rash to draw conclusions from an inquiry of such limited scope, but a comparison with the corresponding categories in Nottinghamshire (the details of which will be given elsewhere) for the period 1701–53, while not entirely confirming this order of the going to the altar, brings out the fact that the largest group of skilled men, Framework Knitters, constituted the youngest marrying group and the labourers—there are 312 of them—the oldest.

Are we to conclude from this that apprenticeship was not after all the bar to early marriage, which we have always understood it to have been? And, since the industrial groups appear to have married earlier than the agricultural groups, would not the rapid growth of the former automatically result in a fall in the age of marriage and a rise of the birthrate? An examination of the fertility rates (by dividing marriages into baptisms with a suitable time-lag) in a number of Nottinghamshire villages goes some way to confirm this. It is too long to reproduce here, but it suggests a surprising degree of responsiveness of the fertility rate to economic opportunities, and leaves the impression that industry was, to some extent, creating its own labour supply by increasing the proportion of those occupational groups which had always married early and by encouraging them to marry earlier still.

It will be seen that the claims made by the editors of this volume of Allegations are unduly modest. Taken in conjunction with other material of this kind, it points the way to a solution of the vexed problem of eighteenth-century population growth. At present this problem is bogged down in unfruitful theoretical discussion on the basis of evidence that is little more than guesswork, and economic historians should be grateful to Mr Frith and to Mr McGrath—and to their distinguished predecessors W. P. H. Phillimore, T. M. Blagg, F. A. Wadsworth and others—for providing them with the kind of material which alone can make possible further advance to its solution. Those who would minimize the part played by the birth-rate among the causes of the demographic revolution of the eighteenth century will have to take it into account, and all—demographers and economic historians alike—who are interested in this question will have to forgo the pleasure of reaping where they have not sown, and join the genealogists and antiquarians in a study of parish archives where alone the answer is to be found.

J. D. CHAMBERS

University of Nottingham

DAVID OGG. *England in the Reigns of James II and William III.* (Oxford: Clarendon Press. 1955. Pp. xii+567. 50*s*.)

Mr Ogg explains that his new volume, together with the two volumes of his earlier work *England in the Reign of Charles II*, is intended to provide 'a continuous account of English history and institutions in the period 1660–1702'. As in the earlier volumes, he has interposed analytical and descriptive chapters which deal with economic and social institutions; and it is with these chapters that this note is primarily concerned. In his opening chapter he sketches the economic and social development of Scotland, Ireland and the Plantations, moving on to an examination of English population and social structure. Later chapters interspersed in the political narrative deal with industry and trade in relation to the demands of war. These analytical sections deserve the attention of economic historians for several reasons. They are not—as is often the case when political historians deal with economic history—merely derivative and second hand. One of Mr Ogg's great merits as a historian is a gift for blending a synthesis of recent work with his own independent research, not least into economic problems—such as, for example, the state of public finance after the Revolution. The larger view which he develops as a general historian leaves him dissatisfied with narrowly economic interpretations: hence some trenchant common-sense judgments on some recent theories that have obtained wide currency. Readers of his *Europe in the Seventeenth Century* may remember a typically vigorous bibliographical note on Professor Hamilton's views about Spanish prices and Spanish decline. This new volume contains similar examples: Mr Ogg stoutly refuses to have history stuffed into convenient economic nutshells. Thus he is sceptical of the opinions of those who make much of the relationship between Calvinist ethics and the rise of the Dissenting business community: Dissenters went into business (he believes) principally because it provided 'practically the only outlet for their activities'. He is equally impatient of the suggestion that economic motives lay behind the support for Monmouth's rebellion. Economic distress there was in the west in these years, but rebellion was more probably what the rebels proclaimed it: a rebellion against the threat of Popery. It is easy, Mr Ogg suggests, to attach in retrospect too much weight to an economic hardship which men had come to regard, like the weather, as part of the divine order of things. 'A suggested reason for historical events', he reminds us, 'is not necessarily wrong because it is old.' This gentle scepticism about some suggested (and frequently accepted) economic interpretations of political and religious phenomena should not be read to indicate any general underestimation of the importance of economic factors in history. Ch. x (Material Resources for War: Industry and Trade) contains an excellent analysis of the motives underlying national policy. It gives full weight to the necessity to view economic matters against the background of war, and avoids the error of under-estimating the intelligence of measures designed to raise levels of employment and the value of exports: seventeenth-century England held to a conception of national wealth based on the inter-connexion between '...native industries, a large volume of shipping and an increasingly powerful navy'. To this end, a revolutionized system of public finance was indispensable and ch. xiv is devoted to a careful and detailed, but lucid, exposition of the workings of the National Debt and the Bank of England. Good as all these sections are, they are surpassed in quality by the one which Mr Ogg has called 'Freehold and Status'. In a chapter at once learned, eloquent and wise, we see the people of seventeenth-century England—the apprentices, the freeholders, tradesmen, the 'poor', the parsons' wives, the merchants—come alive to take their place in a living moving society, not as mere parts in a mechanism. This chapter blends social, economic and legal history in a way oddly reminiscent of Maitland. And it reveals how essential to genuinely dynamic history is that intimacy with historical sources that can only come from the process of total immersion, and for which a mechanical conception of the 'variables' is no substitute. Mr Ogg succeeds brilliantly in his object: to show how an England that was rapidly developing into a great commercial state was still 'regulated by a jurisprudence the letter and spirit of which were both, to a large extent, medieval'.

There are a few matters involving economic detail where Mr Ogg's conclusions seem less securely grounded. To suggest that the Cornish tin industry was already facing disaster in this period because of the declining popularity of pewter (p. 287) (if this is indeed the suggestion) is surely premature. If pewter was declining, tin plating was only just beginning. The rather summary statement of the trends of landholding (p. 118) seems to go further than is warranted by our present knowledge of the country as a whole. And should not something more be said in the sections on public finance on the debt of ideas and physical capital owed to the Dutch in this age of what Tories venomously dubbed 'Dutch finance'? Yet these are relatively minor points: they do not seriously impair the merits of a treatment marked consistently by imagination, sound judgment and an unfailing sense of perspective. CHARLES WILSON

Jesus College, Cambridge

EMMANUEL COPPIETERS. *English Bank Note Circulation 1694–1954.* (The Hague: Louvain Institute of Economic and Social Research and Martinus Nijhoff. 1955. Pp. 171.)

Although M. Coppieters' title covers the whole period from 1694 to 1954, two-thirds of the book—and by far the best part—is concerned with the years between the restriction of cash payments in 1797 and the passing of the Bank Charter Act of 1844. This is a field in which many economists have worked, and M. Coppieters draws heavily on their writings. He does, however, make an original and interesting contribution in his analysis of the attitudes of theorists, pamphleteers, practical bankers and politicians towards the note issue. In particular, he deals in greater detail than earlier writers with the reasons for the dislike of the £1 and £2 notes, and with contemporary opinion on the relationship between the country bank notes and those of the Bank of England. The last part of the book, dealing with the history of the note issue since 1914, is rather slight and is taken largely from secondary sources. The author is convinced that control of the note issue is unimportant for the regulation of monetary policy; 'The technique of monetary management has long passed the age of restraint by limitation of the note issue'. This view has many adherents, but it also has strong opponents, and it is a pity that the theoretical case for it is not argued more fully.

University College, Swansea E. VICTOR MORGAN

JOHN ROWE. *Cornwall in the Age of the Industrial Revolution.* (Liverpool University Press. 1953. Pp. x+366. 20*s.*)

The economic history of Cornwall is the story of three primary activities, agriculture, fishing and the mining of non-ferrous metals. Parts of the county's history have been told in such books as G. R. Lewis, *The Stannaries*; A. K. Hamilton Jenkin, *The Cornish Miner*; H. Hamilton, *The English Brass and Copper Industries to 1800*, and in the various studies of Boulton and Watt. There has been, however, a need for a local study of the area, and this need, in a large measure, is met by Mr Rowe's work.

The beginning of the modern period in Cornish economic history dates from the last decades of the seventeenth century, when not only the output of tin increased but, more significantly, the use of coal-fired reverberatory furnaces and of atmospheric steam pumps facilitated the growth of copper mining. The first half of the eighteenth century represented the 'eve of change'. Tin production continued to increase slowly; but copper mining, with an expanding home market, developed substantially, borrowing from its older neighbour the traditional methods of finance and employment of labour. Nevertheless, it was not until the outbreak of the War of Austrian Succession that the value of its output exceeded that of the fishing industry, or until the 1750's that of tin. Thereafter the existence of prosperity or depression among the mining community depended largely upon conditions in the copper trade: for the next century Cornwall was pre-eminently the 'Copper Kingdom'. And like all such kingdoms there was a rise and a decline. The initial period of supremacy came to an end with the collapse of the boom in mid-1772. There followed a quarter of a century of conflict, internally and externally, under the pressure of cheaply-won Anglesey ores; and the struggle involved not only the Cornish mining interest, but the Associated Smelters of Bristol and South Wales and the Midland consumers of brass and copper. It was a period when the supplies of tin and copper outstripped demand and led, as earlier in the Northumberland coal trade and later in the iron industry, to far-reaching cartel arrangements of varying degrees of success. The coming of the Napoleonic Wars, the exhaustion of the Anglesey ore deposits and the end of the Boulton and Watt patent, all contributed to a revival of prosperity, which for tin, as for copper, reached its golden age in the post-war economic expansion. During the first decade of the nineteenth century Cornwall turned out, on a yearly average, 2,624 tons of tin and 6,060 tons of copper: in the 1830's the equivalent figures were 4,224 and 16,161 tons. The end of the kingdom was inevitable. The consequences of diminishing returns were evident at the middle of the century. It was the development of foreign resources which achieved what those of North Wales failed to do. By 1870 the 'Copper Kingdom' was over—tin lingered for some decades more—and the widespread emigration of its skilled miners had begun.

Cornwall's greatest drawback in the industrial field was its lack of coal, and it was this which shaped much of its development. It proved economic to carry fuel to ore in the case of tin, but it was necessary to ship the county's most valuable raw material to Bristol and South Wales. Thus, despite the growth of a few well-known engineering concerns, there was no significant diversification of industry. The same fact led to a division in the structure of the copper industry, to the detriment of the miners; and because of the need to import coal, to the domination of the merchants and shipowners in the smelting of tin. In turn, the concentration on a long-established activity, combined with the county's geographical remoteness, maintained the old legal and economic institutions of the mining industry. The cost-book system, for example, was never wholly replaced by the joint-stock company; and, while the practice of employing whole mines on tribute declined in the early nineteenth century, parts of mines continued to be worked under this system, in itself a relic of the old free miners. 'A good pay-day for the Cornish miner depnded not on any decision of a wages board, but upon the miners' own skill and judgment and the bounty of nature.' The continuance of this system, and the fact that most of the miners in outlying districts were part-time farmers and fishermen, accounts for the remarkable absence of strikes in the area. It is not surprising that the corn riots which so characterized the eighteenth century persisted here until 1850.

Of the other industries, it was fishing—on which there is an excellent chapter—which most felt the impact of capital in this period. Agriculture and smuggling, the other two major occupations, changed little until well into the nineteenth century. 'The farming implements in this county are of the most ponderous kind', wrote a contemptuous observer towards the end of the Napoleonic Wars. '. . . the farmer has an enormous plough to which fourteen oxen and seven horses are attached, suited to the employment [to] which the Roman Emperor devoted an instrument of this kind in the streets of Jerusalem. With this he mercilessly enters the bowels of the Earth to a depth of twenty or twenty-two inches; and sometimes leaves her lacerated form unfit for the purposes of vegetation.' Both the measure of self-sufficiency among the mining community, and the large extent of wastes and commons, tended towards the slow adoption of contemporary techniques of intensive farming. It was the building of railways, as much as any other factor, which gave the necessary impetus to improvement.

Mr Rowe tells this story with a wealth of detail which throws much light on the impact of wars and of commercial crises. It would, however, have enabled the reader to follow the argument more easily if the author had provided a more extended series of prices, some statistics of tin exports and a map. For this last purpose the end-pages are inadequate. But the most serious criticism, perhaps, lies against the approach of the writer. By its arrangement the book tends to belie its title. It is less 'Cornwall in the Age of the Industrial Revolution' than 'The Industrial Revolution in Cornwall'. Attention is focussed on the mining industry, which gets the picture of the county's economy out of perspective. It is true that the value of mining output provides a basis for this approach, yet the industry never seems to have employed more than a quarter or a third of the total population, either directly or indirectly. Finally, one would like to have seen more notice paid to the financing of mining investment. In the eighteenth and nineteenth centuries the sources of capital largely depended upon the type of industrial expansion to be financed and the extent of local economic development. In Cornwall both were favourable to local investment, and no doubt much was provided by the long-established merchant houses at the major ports. But it was also reported that small traders and the farmers were habitual speculators in mines and fisheries, and it would be of value to know how important a part they played in the economic development of the county.

The London School of Economics A. H. John

THOMAS BALSTON. *William Balston, Paper-Maker, 1759–1849.* (Methuen. 1954. Pp. xii+171. 21*s.*)

Mr Balston's seemingly artless study of a single man is, within the horizons set, a model of its kind. He has rejected the romantic anecdotage of commemoration as completely as he shuns the opposite vice of fitting his subject, Procrusteanwise, into the bed of a generalized industrial development to give a contrived microcosm of an idealized whole. William Balston had some of the archetypal qualities of an Arkwright–Wedgwood–Whitbread entrepreneur—skill, energy, pertinacity, ambition, forthrightness—but only some. He fits no pattern: while taking steam-power to set up the largest paper mill in the country in 1805 he refused to adopt the Fourdrinier machine, although conscious of its potentialities, and specialized in heavier papers against the tide of Fourdrinier mechanization which was beginning to change the structure of the industry. Balston was a great paper-maker, thinking always of quality and expansion, but not a good business man, so that financial over-commitment held the threat of illiquidity always over him. His new mill cost £47,000, of which £31,000 was borrowed from Susanna Whatman (his former Master's widow), Maidstone bankers and London stationers (who acted as bankers for their suppliers). Throughout the years of troubled trade he was putting more vats and beating machines to the engine, fighting to keep his water supplies intact, fighting for exclusive right to the Whatman watermark as a widely-known—and still continuing—guarantee of quality, moving into retailing when the stationers objected to his prices and quantities (just when the Fourdriniers were moving back into manufacture), fighting, as head of the master paper-makers, an equally effective and illegal union of journeymen, but fighting always, and in the end unsuccessfully, against his debts. In 1814, with £17,000 owing to bankers and £15,000 to Susanna and others, her brother, Jacob Bosanquet, foreclosed and forced him to take a son and a nephew into the firm as partners as the price for an imposed financial security. It was not until 1829 that the mill prospered, nor until 1844 that William Balston was able to redeem his mortgage. It is not usual that a chronic shortage of capital (admittedly intensified by indiscretion and ill-management) provides the main theme of such a history of long frustrated commercial endeavour: we must feel a regret that the author has not been able to deploy as much evidence about marketing and pricing, doubtless the source of many of Balston's difficulties in financing out of profits.

Peter Mathias

Queens' College, Cambridge

David Williams. *The Rebecca Riots: A study in Agrarian Unrest.* (Cardiff: University of Wales Press. 1955. Pp. 377. 25*s*.)

The disturbances in West Wales, which began in 1839 and reached a climax in 1842–3, deserve special attention because they do not conform to the usual pattern of agrarian discontent. They were not like those in south-east England in 1830–1, the protests of a depressed peasantry. There was no destruction of machinery, burning of hayricks or maiming of cattle. The main objects of attack were the turnpike gates and incidentally the new workhouses. The movement had no particular political significance and hardly any relation to the contemporary Chartist movement in the industrial parts of Wales. To understand it a close examination of the social structure of the region was necessary. This has been conducted with meticulous care by Professor Williams, who has rightly subordinated the actual incidents to an investigation of the socio-economic causes of unrest. In this way he has corrected impressions which have been popularized by picturesque traditions and more recently by attempts to find a nationalist import in the events. He shows that an increasing population was breaking the bonds of the existing social structure and that the discontent, which had deeper causes, found expression in the form it did because the turnpike gates offered means of registering a protest. Their multiplicity and particularly the tolls charged on lime (then generally used on farms) were genuine grievances. To attack them by night, disguised as women led by 'Rebecca', was easy in the absence of a police force. Even when the Government sent down large numbers of infantry and marines it proved difficult to suppress the movement because the country-folk did not wish or feared the consequences of giving information. As it developed it spread over a wider area and included further grievances, such as Church rates and the payment of tithes. In fact, it revealed a community largely consisting of small cultivators on the edge of poverty and a pressure on available land which was ultimately relived by migration to the industrial parts of South Wales. This volume may be said to be complementary to *John Frost: A Study in Chartism* (1939) in which Professor Williams examined that movement as it affected Wales. Together they form a major contribution to the economic history of the period.

J. F. Rees

Seafarers and their Ships. (H.M.S.O. 1955. Pp. 96. 3*s*. 6*d*.)

The all too frequent unseaworthiness of British ships and inefficiency of their officers was causing great alarm after the Napoleonic Wars—alarm at the heavy losses at sea and at the increasing readiness of merchants to use foreign ships. The remedies proposed by a Select Committee in 1836 were ignored; but the repeal of the Navigation Acts in 1849, opening the special preserves of British shipping to foreign competition, precipitated action—compulsory survey of ships and examinations for officers. This excellent booklet traces the antecedents of the Merchant Shipping Act of 1854, and the elaboration of shipping legislation up to the present.

RALPH DAVIS

University of Hull

KENNETH D. BUCKLEY. *Trade Unionism in Aberdeen, 1878 to 1900.* (Oliver and Boyd. 1955. Pp. xii+201. 13*s*. 6*d*.)

The title of this book is not a good guide to its contents, for it is a study of the growth not only of trade unionism but also of political socialism. The latter topic occupies more than half the text. The author's aim in this section is to 'trace and analyse... the growth of a concept of independent labour representation' (p. x), and he is able to show that in Aberdeen there was a crucial connexion between the campaign for an eight-hour day and the abandonment by trade unionists of the Liberal party.

The economic sections throw light on the conditions of employment in the town, although Mr Buckley is disappointingly vague on the volume of unemployment, and as regards the cost of living he simply falls back on Bowley's estimates. The suggestion (p. 31) that unionism among the unskilled was growing throughout the 1880's is not new, but Mr Buckley seems surprised that help was given by the skilled workers. He attributes this to growing class consciousness and 'the narrowing of the social gap'. Mr Buckley makes a good deal of class consciousness, but class consciousness in Scotland in those days seldom meant class antagonism, and social gaps were seldom invested with that quality of unbridgeability which makes the Marxian analysis fit English circumstances, with reference to which it was devised, rather better.

A. J. YOUNGSON

Emmanuel College, Cambridge

CHARLES LOCH MOWAT. *Britain Between the Wars.* (Methuen. 1955. Pp. ix+694. 30*s*.)

This is an extremely good account of a fascinating period in twentieth-century British history, comprehensive in scope and lively in presentation. Professor Mowat not only excels in vivid narrative: he analyses economic and social structure and political processes with acute understanding. It is unlikely that his account of these years will be disturbed for some time to come.

Nonetheless it is Professor Mowat's own account, and his particular approach to the period reflects both his ideas and his mood. He lays emphasis on the waste and the disappointment of twenty years which the crosswords stole. 'In a sense the crossword puzzle was the symbol of the age: an expensive and ostensibly harmless amusement, leading—nowhere. Utopia in seven letters.'

Even the economic recovery of the 1930's depended on chance rather than calculation: in so far as government policy helped to promote recovery, it was not because, as was usually thought, it was deflationary, but because it was the opposite. The same drift characterized foreign affairs. When Chamberlain finally began a new course in British foreign policy in March 1939, he announced it not as a break from the policy of Munich, but merely as a reply to Hitler's breach of faith with the Munich spirit, 'in the tone of a tradesman rebuking a customer for failing to pay his bill'. In this story of disappointment and deception, Professor Mowat sees the years from 1929 to 1931 as the turning point. Labour's failure to wrestle with the economic crisis made possible 'the return of the sort of government which had already, in the 1920's, failed to promote economic recovery and succeeded only in aggravating social discontents'. In the 1930's, faced with continued depression and military aggression, a 'National' government, which left out many of the ablest men in the country, was bound to generate both disillusionment and apprehension.

This emphasis on waste and disappointment does not mean that Professor Mowat fails to see the positive gains of the inter-war years. 'It was no barren time', he says, 'there were advances towards the better life.' Two chapters of this book—ch. 4 on 'Stability and Change: the Condition of Britain in the Twenties' and ch. 9 on 'The Secret People and the Social Conscience: the Condition of Britain in the Thirties'—are well-balanced studies in social history, and the author is able to show why there are different interpretations of the 1930's. There were several Englands, with contrasting fortunes, and there were sharp distinctions in the lot of various social groups. The experience of those years is indelibly stamped on the political map of contemporary England, and there are 'myths' of the 1930's which still serve to inspire or infuriate people today. Our choice of evidence relating to the 1930's will often depend on our contemporary position, as the post-war debate in the *Bulletin of the Institute of Statistics* between Mr Seers and his opponents showed.

Professor Mowat perhaps does not pay quite enough attention to those elements in British society which prevented the Great Depression from affecting Britain in the way in which it affected many continental countries. There was a 'National' and not a Fascist government: there was apathy rather than revolution in the unemployed areas: there was talk of a Popular Front, but it remained talk: there was 'appeasement', but remarkably little open collaborationism. More emphasis on this aspect of the story would lead to a slightly different interpretation of the period. Certainly, as Arthur Bryant's articles written at the time show, British deviation from continental processes and reactions was made a matter of pride and frequently became a cause of misunderstanding. Professor Mowat's book would gain if it were placed a little more directly in its European context.

Even from the standpoint of Chicago, where Professor Mowat wrote his book, certain aspects of British social life during the inter-war years acquire an added interest when viewed comparatively. The new technology, for instance, which helped to shape a new material environment, was developed less rapidly in Britain than in the United States. Why? Professor Mowat talks of hire purchase (p. 499) and gives statistics about its extension, but surely more significant than its expansion were the limits to its spread. He describes the emergence of new consumer goods and a new communications nexus, but again (in retrospect) one is struck by the obstacles to the full realization of a society depending upon large-scale advertisement. In the field of production itself, which the author surveys with great skill, more could be made of cautious attitudes towards obsolescence, the survival of 'family' ideas in business, and the fear of expansion. Professor Mowat's account of the economy during the 1920's is fuller than his account of the economy in the 1930's, which stops short about 1935. A study of the years 1935 to 1940 brings out not only the special characteristics of the year 1938, which is so often taken as a modern (and misleading) base-line in statistical comparison, but the persistence of structural problems in the changing economy.

It would be churlish to suggest omissions from this packed book, but in any case there are almost none. Among subjects which seem to me to demand rather fuller treatment are the Civil Service and the administrative set-up, the newspapers (briefly described), and the forms of party organization. There are very few slips left over either by Professor Mowat or the printer, and the book can be used with the utmost confidence as a quarry of information and ideas.

ASA BRIGGS

University of Leeds

EDWARD NEVIN. *The Mechanics of Cheap Money.* (Cardiff: University of Wales Press. 1955. Pp. 350. 25*s.*)

Dr Nevin's studies of monetary policy in the 1930's, which have already produced several illuminating articles, have now borne fruit in a full-length monograph. The period presents many difficulties for the historian, some of them natural and inevitable, others artificial and created by the secrecy of the Treasury and the Bank of England. The latter kind are particularly numerous when it comes to estimating the security holdings and the market operations of the Bank, the Exchange Account and other government departments and agencies. Dr Nevin is forced to spend much time and ingenuity, and at times to make sweeping assumptions on rather slender evidence, in order to get estimates of statistics which, in some other countries, are published regularly from month to month. He, himself, would be the last to claim a high degree of precision for these estimates, but it would be hard to imagine anyone making fuller or better use of the little authoritative information which is available. Another difficult question which Dr Nevin examines very fully is the influence of the bill shortage in restraining the overall expansion of bank credit. He quotes several instances in which total lending increased while the 'liquidity ratio' was below 30 per cent. On the two occasions when a low liquidity ratio was associated with a decline in total lending, the demand for advances was also falling, and the banks were reluctant to offset the decline both in liquid assets and in advances by adding to their investments. Dr Nevin therefore concludes that, in this period at least, the shortage of liquid assets did not impose any serious restriction on credit expansion. In considering the way in which monetary policy exerts an effect on spending and economic activity, Dr Nevin stresses the contrast between the flexibility of yields on stock exchange securities and the rigidity of rents and of institutional rates of interest (those of building societies, insurance companies, the National Savings Movement and even the commercial banks). He shows how this affected the income both of persons and institutions, and how it induced a number of shifts of funds from one type of asset to another. Two examples are the increase in the proportion of equities in the portfolios of insurance companies, and the switching of funds by some personal holders from securities to the building of houses for letting. In general cheap money stimulated movements which either added directly to investment, as in the case of housing, or increased the availability of loans to business investors. Dr Nevin makes a very good case for his contention that this is an important and rather neglected element in the working of monetary policy. The weakest feature of the book is what the present reviewer would regard as an unduly rigid adherence to a Keynesian theoretical structure. There are times when this seems to produce unnecessary difficulty of exposition, but on the whole Dr Nevin has little difficulty in overcoming these self-imposed restraints. He has produced a book which makes a real contribution both to knowledge of this bit of recent history and, more generally, to understanding of how monetary policy works.

University College of Swansea E. VICTOR MORGAN

H. DUNCAN HALL. *North American Supply.* (History of the Second World War, United Kingdom Civil Series.) (H.M.S.O. and Longmans, Green. 1955. Pp. xvi + 559. 35*s.*)

This exciting story has many of the suspense features of a 'thriller' and Mr Hall tells it well. The critical points are four: Dunkirk and the French collapse, summer, 1940; the Lend-lease Act, March 1941; the entry of the United States into the War, December, 1941; the peak of U.S. munitions production and of lend-lease, end of 1943. Mr Hall devotes rather more than two-thirds of his space to the periods before Pearl Harbour when the United States was a neutral but never unfriendly power. Indeed, a good proportion of his attention is concentrated on the events and problems of the nine critical months from June 1940 to March 1941. This is the right balance—for a British history. The 'well-lit stage of lend-lease' and the 'harvest of munitions' from U.S. industry belong more to an American history.

The period of waiting for the Lend-lease Bill to pass the Congress was an exasperating one for British officials in London and Washington alike. The plan for '3,000 planes a month', and all the other imaginative schemes of 1940, were in abeyance. Scarcely any new munitions contracts were being let, either by the British or by the Americans, while the British supply of dollars ran out and the American public came to realize the dangers their country faced. But the conclusion, in retrospect, is that it made little difference to the conduct of the war. The British contracts, and those of the French taken over in 1940, had done most of what was necessary; U.S. industry was learning to produce the weapons required in the war against Hitler. Even more vital was the fact that new plants had been built with British cash, and just when they were later wanted. $80,000,000 had been spent on new capacity for aircraft engines, $60,000,000 on plants for explosives, $17,000,000 on production lines for tanks, and another $17,000,000 on two shipbuilding yards, the beginning of the fabulous empire of Henry J. Kaiser. All this was more than a foundation on which to build a munitions industry when the time came to convert U.S. manufacturing from peace to war.

It was in the period before Pearl Harbour—long before the Combined Boards were at work—that most of the essential steps were taken in the exchange of information and in the co-ordination of Anglo-American-Canadian munitions programmes. The famous 'Balance Sheet' (p. 264) was drawn up at the end of 1940 and the equally renowned 'Consolidated Statement' (p. 322) was put together in the late summer of 1941. Nothing like this was ever achieved before, even between active belligerents; and it came when the United States was still hoping to avoid war.

This history makes it clear how important it is to trust the man on the spot, and to have the right man on the spot. Administrative ability and the tact of a diplomat are both needed, but also imagination and daring. We were indeed fortunate in having, in Washington during 1940–1, such men as Purvis, Monnet and Phillips. They were a remarkable team. Arthur Purvis was in control of everything up to his tragic death in August 1941. Sir Frederick Phillips was one of the best of all Treasury officials, with the clarity of thought of the mathematician he was. Jean Monnet was more of a free-lance, the 'idea-man' and 'trouble-shooter' of the team, and an indefatigable puller of the right wires. Mr Hall does full justice to Purvis, perhaps not as much to Phillips, certainly less to Monnet; see for example the inadequate and rather ungracious footnote on p. 264. Anyone who was there can trace Monnet's influence in most of what happened in Washington after his arrival from London in July 1940. The difficulty for the historian, even of the recent past, is to assess the contribution of a man who (like Monnet) leaves his imprint on the shape of events, rather than on the documentary records.

There are stretches in Mr Hall's narrative when it is difficult to keep hold of the main thread, to get the dates in proper sequence. There is also evidence that his text, which seems to have been completed by 1951, has been subject to subsequent deletions, insertions and rearrangement, possibly in the interests of accuracy and with a cautionary eye on the release of information. It does happen, for example, that the main reference to a particular person or organization occurs, not at the first, but at a subsequent appearance. Fortunately there is a very full, and excellent, index. But Mr Hall handles his material so well—even the tricky subject of finance—that it is scarcely fair to criticize. This is not just a work of reference; it is a tale told and to be read.

R. G. D. ALLEN

London School of Economics

C. B. A. BEHRENS. *Merchant Shipping and the Demands of War*. (H.M.S.O. and Longmans, Green. 1955. Pp. xix+494. 35*s*.)

There were certain 'decisive' battles in World War II, where the whole result hinged upon our success, and failure spelt certain defeat. These were not numerous, perhaps only two—the air-battle of Britain and the Battle of Shipping, the subject of this book. To the student of Economic History it is very important; to the student of war, vital.

We were caught napping, but not for the usual historical reason: not through failing to foresee the trouble, but because there was not enough experience in existence to make 'planning' a practical proposition. So we courted disaster by starting unprepared. Yet, as the author rightly emphasizes, we escaped disaster because of our great national assets of refusal to panic, 'making-do' with what we had, and using experience intelligently when we gained it. From these, long before the end, there sprang a remarkably efficient planned system pivoted on, and made possible by, the Ministry of War Transport, begotten by commonsense out of chaos, born in confusion, yet growing up into a perfect example of the British genius for extemporization. Then, having acquired an adequate system of national controls, we proceeded, by a parity of method, to institute, with the U.S.A., a corresponding system of world-controls: which brought victory.

It is a wonderful story, but so complex that only an exceptionally clear thinker could have compassed it. The public consistently oversimplifies, imagining that 'Tonnage lost by Enemy Action' was the only criterion. Miss Behrens shows, however, that this, though naturally important, was only one of many factors. Her subject is 'Shipping'—not merely the ships, but the cargoes in them, their assemblage, stowage, delivery and subsequent distribution: not only ships, that is, but 'ports', 'congestions', 'turn-rounds' and, later, transport, by road, rail or 'coaster'. Thus she shows that in early 1917, the crux of World War I, 'nearly as much imports were lost because of delays in port as could be carried...by the ships that were sunk'. That we escaped this in World War II, with the ports under much heavier bombing, was due to the wonderful planning already mentioned; especially perhaps to the devoted men of the 'Diversion Room' who met daily throughout the war to handle immediate cases on their merits.

'Material' looms much larger here than 'Personnel', to which, however, one valuable section is devoted. One would have liked more, yet perhaps the author was right. She was certainly right, too, in refusing to discuss the 'causes' of the merchant seamen's astonishing courage and fidelity to duty. 'Those with firsthand knowledge of it', she concludes, 'always saw it as a kind of miracle: a unique expression of a free people into whose causes one did not enquire further.' This is as wise as the rest of the book is detailed, reasoned and clear.

Royal Naval College, Greenwich MICHAEL LEWIS.

FRANCE

R. DELATOUCHE. 'Agriculture médiévale et population.' (*Les Études Sociales.* 1955. No. 2, 13–23.)

In a suggestive though not in a wholly orderly manner, the author poses the important question of whether at the beginning of the fourteenth century agriculture was sufficient to feed a population which, according to the *Rôle des feux* of 1328, F. Lot considers existed in France; that is to say fifteen to sixteen million inhabitants. His conclusion is in the affirmative. PHILIPPE WOLFF

University of Toulouse

MARC BLOCH. *Les caractères originaux de l'histoire rurale française*, vol. II, *Supplément établi par R. Dauvergne d'après les travaux de l'auteur* (Paris: A. Colin, 1956. Pp. xliv+230. 885 fr.)

In 1951 the *Librairie Colin* republished the original text of *Caractères originaux*, Marc Bloch's great classic. The new edition was much needed, and has met with great success. But on how many points had Marc Bloch overtaken his own ideas! Faithfully, and with a willing self-effacement, M. Robert Dauvergne has attempted to show us this development. In the same order as in the book itself he groups together extracts and summaries of articles and reviews published by Marc Bloch between 1931 and 1944. Naturally this cannot replace, and does not pretend to replace, the great book which we hoped to receive from the hand of the master. But this supplement is more than a useful tool. It gives us a sharp and moving impression of a lively, open and fertile mind cut short at the summit of achievement. It also shows us the wealth of work undertaken on paths opened up by Marc Bloch: that which Marc Bloch himself took account of, as well as that which he could not know of and of which M. Dauvergne has had the happy idea of compiling a brief list.

Philippe Wolff

Gaston Roupnel. *Histoire de la Campagne Française.* (Paris: Grasset. 1955. New edn. Pp. 289. 870 fr.)

We note the new edition, without change, of Gaston Roupnel's important work, and we remind readers of the review of the first edition by Lucien Febvre in the *Annales d'Histoire Économique et Sociale* of 1934. This first edition, coming soon after *Les Caractères originaux de l'histoire rurale française* by Marc Bloch, both supplemented and confirmed it.

Frédéric Mauro

University of Toulouse

M. Bloch. *Esquisse d'une histoire monétaire de l'Europe.* (Paris: Cahiers des Annales, no. 9. 1954. Pp. 96.)

This slim volume is composite in character. The first part consists of lecture notes dealing with the history of money between the fall of Rome and the thirteenth century and with the monetary changes of the latter century. A second part consists of the text of lectures on monetary 'mutations' in the later Middle Ages delivered by Bloch at Brussels in 1939. Finally, there are some less detailed notes, which are also incomplete, on the monetary system of the 'capitalist era'. Faced with such miscellaneous materials Bloch's literary executors may well have hesitated to publish, but we may be grateful to them that ultimately they decided to do so. The second portion, in particular, though already available in *Annales* for 1953, is a most useful introduction to the character and consequences of monetary 'mutations' and amplifies Bloch's own treatment of this problem in 1934 in a review of E. Stampe's *Das Zahlkraftrecht in den Königsgesetzen Frankreichs.* The remainder, too, despite its unfinished form, will be welcomed by economic historians. Marc Bloch was a master in this field as in so many others; and he treats monetary history not as a narrow specialism, but in the broadest framework of economic history. If only for that reason this little book will establish its place as an introduction to the subject.

St John's College, Cambridge

Edward Miller

E. Dolléans and G. Dehove. *Histoire du travail en France.* Vol. i. *Des origines à 1919.* Vol. ii. *De 1919 à nos jours.* (Paris: Domat-Montchrestien. 1953 and 1955. Pp. 418, 509.)

Édouard Dolléans devoted his life to the history of labour and the working-class movement: he died before the publication of the second volume, which comes very largely from the pen of his collaborator, Professor Gérard Dehove. The second volume alone brings forward a new study: the first volume is no more than a bringing together of previous publications. After an introduction in which the authors endeavour to define 'the direction of history of labour', they study briefly the evolution of craft gilds from their beginnings until their suppression in 1790. A relatively important chapter is devoted to the disruption which the French Revolution brought to the condition of workers and peasants. They discuss the decline of the *compagnonnages* and the birth of trade unions at greater length, and the law of 1884, which gave corporate rights to French trade unions, is subjected to an exact and penetrating analysis. The second volume will specially interest historians by its novelty and the scope of its documentation. It is devoted to the history of French trade unionism from 1919 to 1954. It gives with great clarity an exposition of current social legislation which has come into being almost entirely since the end of the Second World War.

University of Toulouse JACQUES GODECHOT

M. REY. 'Le Z I B 305 (Deuxième partie), Étude d'histoire monétaire en France au début du XVe siècle.' (*Annales Littéraires de l'Université de Besançon.* 1954, Pp. 27–52.)

An account of receipts and expenses of coinage minted in all the mints of the Kingdom in 1402–3—unfortunately a unique document—enables M. Rey to draw up a monetary map of France of that period and to pose a number of very important problems. PHILIPPE WOLFF

HENRI LAPEYRE. *Une famille de marchands: les Ruiz. Contribution à l'étude du commerce entre la France et l'Espagne au temps de Philippe II.* (Paris: A. Colin. 1955. Pp. 671. 2,400 fr.)

The author has used the Ruiz sources—private sources still in their virgin state —from the provincial archives of Valladolid. He has also done research into French archives. Above all he has made brilliant use of the methods of historical geography and the history of institutions exemplified by Fernand Braudel and Raymond de Roover. A family with two branches, one in France, one in Castile, is studied during two generations. In the first part, entitled 'L'art de la marchandise', Henri Lapeyre studies the conditions of trade, the place of the merchant in society, the organization of the firm, transport (especially by sea), navigational arts and maritime law, exchange and letters of exchange, and finally accountancy. In the second part the author is concerned more particularly with trade between France and Spain: the problem of the customs, the military situation, fluctuations of the exchanges, the staple articles of trade. The conclusions? We may cite amongst others the very great importance of the exchange market, the disequilibrium of the trade balance in favour of France, the persistently medieval atmosphere of economic activity. These are rich conclusions. They add to the interest of the book, which in any case offers us the key to a wealth of practices and to a state of mind. FRÉDÉRIC MAURO

H. FRÉVILLE. *L'Intendance de Bretagne (1689–1790), essai sur l'histoire d'une Intendance en Pays d'Etats au XVIIIe siècle.* (Rennes: Plihon. 1953. 3 vols. Pp. 514, 385, 421. 3,600 fr.)

M. Henri Fréville's important doctoral thesis traces the entire history of the Intendancy in Brittany, from its creation in 1689 up to its suppression a hundred years later. It is known that the *intendants de justice, police et finances* were the direct representatives of the king in the provinces and that their powers, notably in economic matters, were vast. Unfortunately M. Fréville has not adopted a logical plan for his study. He examines the work of each intendant in the order of his succession to office, and economic problems are dispersed throughout the length of this monumental study. The alphabetical index could have mitigated this inconvenience, but, although it is very long, it does not contain such basic headings as agriculture, peasants, labourers, artisans, etc.

However, a brilliant economic and social picture of Brittany in the second half of Louis XIV's century can be found in the first chapter: of a country turned outwards to the sea rather than towards the interior of France, of a life which was only really active in the coastal districts and in the ports, of communications which were only easy by sea. The interior of Brittany was one of the most backward regions of France. There were large numbers of beggars and vagabonds, and they increased in the course of the eighteenth century as they did all over France. Certain intendants, like Feydeau de Brou in 1720, had them arrested and sent to the colonies or put to work forcibly in the factories. These last only manufactured textiles, and their prosperity was due entirely to the customs protection instituted by Colbert and rigorously enforced by the intendants.

Much information is to be found in this work on the part played by the royal administration in the control of economic activity in the province. On this subject M. Fréville's conclusions agree with those of M. Labrousse: the coincidence of a period of continuously rising prices with a violent seasonal rise during the years 1787–9 aggravated the position of labourers, artisans and peasants whose wages had not followed the price movement, or who were without resources because of unemployment. Thus, the economic crisis, particularly violent in Brittany, provoked the political crisis and the revolution.

J. GODECHOT

PIERRE DARDEL. *Études d'histoire économique. IV: Importateurs et exportateurs rouennais au XVIIIe siècle. Antoine Guymonneau et ses opérations commerciales. (1715–41).* (Dieppe: Imprimerie Dieppoise. 1954. Pp. 150.)

English historians all know the interest which the economic history of Normandy holds for them. They know also what great efforts of research and publication Norman historians have made. Pierre Dardel's work can be included among them. He relies more on the schedules of bankruptcy cases deposited with the judicial authorities, now preserved in the departmental archives, than on inventories after death, which are less numerous and complete. Considering the dimensions of the essay, the conclusions are fruitful.

FRÉDÉRIC MAURO

University of Toulouse

CLAUDE FOHLEN. *Une affaire de famille au XIXe siècle: Méquillet-Noblot.* (Paris: A. Colin. 1955. Cahiers de la Fondation Nationales des Sciences Politiques, No. 75. Pp. 141. 500 fr.)

This thesis of Claude Fohlen is complementary to the preceding one, and was presented with it to the Sorbonne. It takes us from the study of one branch of industry to that of one industrial undertaking. It is that of Méquillet-Noblot, of

Héricourt near Montbéliard. The story begins in 1802 and stops at the end of the nineteenth century. Since then the structure of the firm, though always alive, has not greatly changed. Family continuity, linear development, self-financing of the undertaking, greater sensitivity of the cotton industry to the decennial crises than to the longer-term fluctuations, the importance of concentration, all these general characteristics make themselves evident in this study, and are summarized by the author in his conclusions. FRÉDÉRIC MAURO

MICHEL AUGÉ-LARIBÉ. *La Révolution agricole.* (Bibliothèque de Synthèse historique, collection l'Evolution de l'Humanité. Paris: Albin Michel. 1955. Pp. xix+435. 1,100 fr.)

It is the greatest pity that M. Augé-Laribé, the eminent French specialist on agricultural problems, died before this book was published. Without doubt he would have corrected the lack of balance and the hesitations which one notices in the plan. Throughout the book, indeed, one keeps asking what was the main point of M. Augé-Laribé's study. The Agricultural Revolution, that is to say the transformation of the agrarian regime and methods of cultivation, has certainly spread across the entire world; without doubt it has been more universal and precocious in America than in Europe: but M. Augé-Laribé says practically nothing about American agriculture, and what he says about Europe mostly concerns France. The chronological plan adopted by the writer is doubtless responsible for this distortion. It is impossible to study the agricultural transformations of all the different regions of the world in each of the five periods which M. Augé-Laribé distinguishes from the beginning of the sixteenth century until the present day. These transformations did not synchronize. Modifications of the agrarian structure and the introduction of new crop rotations took place in the sixteenth century in one country, in another not until the nineteenth. It is therefore essential to follow a logical arrangement. In addition the work is weighed down with overlong quotations. Describing French agriculture on the eve of the Revolution, M. Augé-Laribé quotes ten consecutive pages of Arthur Young. Above all this book deals with the Agricultural Revolution in France, and particularly during the last hundred years. An excellent study of recent agricultural legislation will be found in it, including the laws on *métayage* and rent, and the laws on agrarian social insurance. Here and there apt and picturesque phrases show that M. Augé-Laribé knows his French peasant, but one cannot but regret that his book does not give us the wide synthesis that the title leads us to expect. J. GODECHOT

PAUL COMBE. *Niveau de Vie et Progrès Technique en France depuis 1860.* (Paris: Presses Universitaires de France. 1956. Pp. xli+618. 1995 fr.)

Dr Combe (this is by no means necessarily a drawback) is not solely an economist, but a scholar with a wide range of interests. He has also written books on the French drama, on Thiers, and on alcoholism in modern France.

In the eighteenth and early nineteenth centuries France led the world in economic and statistical studies. Then, for a long time, there was a very barren period. Outstanding in this period was François Simiand, to whom this book is affectionately dedicated, who in *Le Salaire* and other books published in the 1930's made a heroic effort to extract order from the chaos of French economic statistics, and to link the present with the past. Dr Combe also acknowledges the leadership of the historians, Professors Mantoux and Morazé. More directly, he has been a disciple of Professor Fourastié, professor at the Conservatoire National des Arts et Métiers, who has succeeded both as an original researcher in recent French economic history, and as a popularizer of the concepts of technical progress and of the fundamental and unexpected economic changes which result therefrom.

The present reviewer, when writing *The Conditions of Economic Progress* in 1939, stirred up the muddy waters of French nineteenth-century statistics to an extent sufficient to provoke a very thorough re-examination by Messieurs Guilbaud and Mayer (*Proceedings of the 1951 Conference of the International Association for Research in Income and Wealth*). Dr Combe likes to give a rather pessimistic account of the trend of French economic development, at any rate since 1900. The present reviewer's very tentative studies indicate however a fairly satisfactory upward trend in French productivity. The more thorough recent studies by Messieurs Guilbaud and Mayer, by Professor Sauvy and by the O.E.E.C. indicate that French productivity is a good deal higher than most Frenchmen care to think (pessimism is fashionable); and, compared with the mid-nineteenth century, France shows one of the highest growth rates in Europe. It may be said that this indicates how low productivity was in mid-nineteenth century France; but o1 the satisfactory subsequent rate of growth there can be little doubt.

The author, with his great learning and wide range of interests, has set out to assemble and synthesize a comprehensive study of French economic development between 1860 and 1939, with a scrappy postlude on developments since 1939. His re-statement and bringing up-to-date of Simiand's work is really valuable, because it is now in a much more compact and useful form. His supplementary studies are of varying value. Of particular interest are his comparisons of the trend of agricultural land values in France and other countries (he has a particular interest in agriculture) and of France's declining share in the world markets for a number of important commodities. But he is quite mistaken in thinking that either land values, or the value of industrial shares, will provide any useful measure of the stock of real national capital, a branch of French economic statistics which has been little examined since 1911. He quotes some interesting studies of the real value, less depreciation, of dwellings in Paris, which has been falling heavily ever since 1914, due to rent regulation and the reluctance of property owners to repair their houses. But much more interesting is his discovery that their real value only increased slightly between 1880 and 1914. The dwellings are just steadily getting older without replacement; in the first and third *arrondissements* the *average* date of construction was in the 1830's.

The book concludes with some very readable general reflexions on French taste, philosophy, excessive preoccupation with intellectual questions, and indeed on French civilization in general. The attitude of the American towards his land is discussed with bewilderment—he treats his land just as if it were a piece of machinery, a thing that a Frenchman could never do.

The author's wide range of learning makes it an interesting book but there is a price to pay in the shape of the deplorable botching of the statistical tables and diagrams. He also seems to be lacking in critical judgment on some technical questions, such as the use of chemical fertilizers, and on his willingness to accept the absurd proposition that the reproductivity of countries falls with increasing amounts of protein in their diet.

COLIN CLARK

Institute of Agricultural Economics, Oxford

CLAUDE FOHLEN. *L'Industrie textile au temps du Second Empire.* (Paris: Plon. 1956. Pp. 534, 1,500 fr.)

The profound transformation in the twentieth century of industrial capitalism in its classical nineteenth century form have brought many economic historians to the study of its expansion. After Louis Girard's remarkable study of the public works under the Second Empire, Claude Fohlen's study on the textile industry in the same period reflects this preoccupation with a field which is untouched except by regional research. In a less favourable period for textiles than for industries manufacturing production goods (there was a cotton famine, then the crisis of 1867, which in its first phase was hard) an increase in production and a development of business took place. During much of the time, because prosperity slowed down after 1860, new arrangements replaced the old ones: new markets for raw materials, new outlets, financial and technical concentration, geographical concentration and regrouping. Claude Fohlen shows us the origins of all this in the effect of circumstances on a situation and geography which he, previously, studied in detail. Amongst all this abundance—the author relies on voluminous private archives hitherto unpublished—what can one choose for comment? Perhaps the excellent chapter on the employers (Part I, ch. 1) in which he distinguishes the patriciate of the bourgeoisie. He demonstrates the part played by family and religion in the spirit of business and—which is essential—the part played by demand, independent of costs of production, in fixing prices. This last point should be pondered over by those who wish to write or re-write the theory of prices in the nineteenth century.

FRÉDÉRIC MAURO

VAL R. LORWIN. *The French Labor Movement.* (Harvard University Press. 1954. Pp. 346. 48*s*.)

This is a learned, wise and timely if sombre book. The central fact of the French political situation is the alienation of the industrial workers from the legal nation, signalized as much by the domination of the *Confédération Générale du Travail* by the Communist party as by the 150 odd Communist deputies in the National Assembly. Professor Lorwin explains a great deal in this situation; the fragmented character of the labour movement, the sporadic character of the militant energy of the French workers, the reliance on political action of a movement that long boasted of its independence of if not its hostility to the state, the importance of regional differences, the probably excessive weight of the social services in a low-wage, largely archaic economy.

The approach is sympathetic if critical. Professor Lorwin understands the historical temper of the French labour movement; he does not think it can be made over in the model of the A.F.L.-C.I.O. or of the T.U.C. The French tradition of the movement must be taken as given. That tradition is largely based on myths; on dramatic if intermittent revolutionary action. Class war is a permanent reality but class war only flares up into open hostilities briefly and almost accidentally. Strikes are, much less often than in America and England, carefully planned and competently directed moves in a larger campaign; they are at times the instruments of the politics of the Communist party; at times local and often justified explosions of distress. (Professor Lorwin points out that the state, the church, even employers subsidize in effect many strikes.) The union negotiators often have no clear idea of the basis on which they are making their claims and the great amount of state intervention plus such complications as family allowances, make the straight fight-or-bargain between workers less common than in America or Britain. (The care for the family revealed in family allowances that are, all things considered, rather lavish, is revealed also in the respect paid to family commitments in 'lay-offs'.)

On the Communist role in the unions, Professor Lorwin is sensible and not tragic in the fashion of so many Americans contemplating the sins of other nations. He notes that, as compared with the Socialist party, the Communist party is really a workers' party; some of its leaders, most of its militants are manual workers. Then, although it has on constant exhibition the oldest of 'vieilles barbes' in the person of Comrade Cachin it does recruit the young more vigorously than do its rivals. The young French worker, bred up on a revolutionary tradition of French history, debarred by the social and educational system from the promotions possible to his opposite numbers in Britain or America, finds in the Communist party and in the C.G.T. a welcome and an opportunity. He may not stay long in either; the party recruiting has a revolving-door character but the ex-Communist does not, as a rule, join another party or union, he remains unattached and expandible on one of the great Communist 'days'. He may see through the party, its repeated cynical sacrifice of the needs of the French workers to the needs of the foreign policy of the Russian state, but as a rule he remains irascible if 'idiotic'.

Professor Lorwin deals with the role of the highly militant foreign workers like the Spaniards, although more might have been said of the Algerians. The slender hopes of the *Force Ouvrière* are tenderly but not credulously dealt with and the role of the Christian trade unions more sympathetically described than is customary in a book written by one from an outside tradition.

The total picture is not very encouraging; French verbalism is as present in the labour movement as in the higher education. The intellectuals who are forever 'going out to the people' have very little to bring them, not what the Webbs or Professor Tawney brought the English movement (although it is odd to have the Webbs described as 'sophisticates'). There is no great willingness to learn from other countries or even to consider seriously the problems of the worker in an increasingly industrialized society. Professor Lorwin, though with obvious hesitation, suggests a 'racial' explanation; the most solid regions of the French labour movement are the least 'Latin' regions. They are also, it may be suggested, the regions with the best coal supply, the best natural transport systems, the most highly developed modern industry. The problem of the Midi is a real one but a racial explanation is far-fetched. Nor are all the variations regional. The *Télémécanique* plant sticks out like a good deed in a naughty world (or a sore thumb according to taste) in the Paris red belt. Since this book was written, there have been minor changes like the fall from grace of M. Lecœur who is here quoted in his day of orthodoxy and what may be very important, the new Renault contract. But this is a book of very great merit indeed.

Peterhouse, Cambridge D. W. Brogan

M. Duverger. *Partis politiques et classes sociales en France.* (Paris: A. Colin. 1955. Pp. 332. 975 fr.)

To what extent are French political parties the expression of social classes? This is the problem that M. Duverger has set himself to solve, with the aid of a dozen collaborators chosen from among the ranks of professors and higher civil servants. The solution has not been easy to find. The documents upon which such a study could be based are in fact either very incomplete or difficult of access: the method of enquiry by sampling gives results which are necessarily suspect. In addition, the authors of the studies in this volume have not limited their researches to persons regularly affiliated to political parties, but have spread them as far as possible to all those who at the time of an election vote for the party; and this has not made the author's task any simpler. These studies can be divided into three groups. Six of them attempt to sketch the composition of the French social classes, working classes, middle classes, salaried workers, skilled personnel of industry, officials, peasants, etc.). Six others study the social composition of the large political parties. Finally, one chapter of which the sources are more reliable than elsewhere in the book, describes the social origin of members of the National Assembly. This study, however, is based on the data of the 1951 elections, which means that the work is already out of date. It needs to be brought up to date and the appearance of the *poujadistes* in the Chamber will modify it noticeably. The work remains nevertheless a good tool for the study of the economic and social foundations of political parties in France during the first ten years of the Fourth Republic.

J. Godechot

THE LOW COUNTRIES

Bijdragen voor de Geschiedenis der Nederlanden. (The Hague: M. Nijhoff.)

Each issue of this periodical contains an extensive critical bibliography on the general history of the Low Countries, while a practically complete list of books and articles on Belgian History in 1954, not less than 1,200 items, has been published by *Revue belge de Philologie et d'Histoire*, XXXIII (1955), 737–72 and 997–1,035.

J. A. van Houtte

René Evrard. *Les artistes et les usines à fer. Oeuvres d'art inspirées par les usines à fer.* (Liège: Editions Solédi. 1955. Pp. 111.)

This book contributes to an unusual subject: the iconography of ancient industry. Some sixty works of art, some of them little known, are reproduced (very attractively), three of them in colour, and analysed as sources for the history of the iron industry. Except for seven items relating to the Roman world, all others from *c.* A.D. 1500 to the present day are supposed to represent conditions in the Walloon industry, although the Swedish iron industry at the end of the eighteenth century, which inspired the painter Pehr Hilleström, had by then certainly grown independent of its Walloon forbears. Thus, the selection seems rather arbitrary and largely fortuitous, but nevertheless remains very useful and suggestive.

J. A. van Houtte

D. van Derveeghde. *Le domaine du Val-Saint-Lambert de 1202 à 1387. Contribution à l'histoire rurale et industrielle du Pays de Liège.* (Bibliothèque de la Faculté de Philosophie et Lettres de l'Université de Liège, No. 130. Paris: Les Belles Lettres, 1955. Pp. 239. B.frs. 500.)

The domain of this important Cistercian abbey, near Liège, proved insufficient for the maintenance of the community about 1280, because of the reduction in real value of rents. After an initial period of mortgaging and selling out part oι the property, the remainder was re-organized about 1350 being let on short lease (3–18 years). However, the chief source of new prosperity was the development of coal-mining on the abbey's lands. An index of names, a map and eleven documents are added to this excellent study. The chapter of Liège Cathedral was called the richest landowner of the principality. It was still more fortunate than the Val-Saint-Lambert because it let its demesne on short lease in kind even before it suffered from the monetary crisis. A *polyptique* of 1280 helps to determine the consistence of the domain: See D. van Derveeghde, Le domaine de la cathédrale Saint-Lambert de Liège, *Anciens Pays et Assemblées d'État*, viii, *Problèmes liégeois d'histoire médiévale* (Louvain, 1955), 159–71, map.

J. A. van Houtte

F. Favresse. 'Les draperies bruxelloises en 1282', *Revue belge de philologie et d'histoire*, xxxiii (1955), 295–316.

This review of the Brussels woollen industry shows that a great variety of cloths was being produced, some of them of high repute in the international market, probably long before this date. A second note by the same author on the Brussels woollen industry appears in 'Sur un passage du privilège ducal du 12 juin 1306 concernant la gilde bruxelloise de la draperie', *ibid.* pp. 602–8.

J. A. van Houtte

G. Doorman. *De Middeleeuwse Brouwerij en de Gruit.* (The Hague: Nijhoff. 1955. Pp. 105. Gld. 6.25.)

Beer has played an important role in the economy of countries unconcerned with viticulture, but unfortunately—with the exception of Germany—its history has been little studied. Beer consists essentially of grains and water to which a mixture of plants is added to improve the taste, preserve it and increase its salubrity. In Western Europe this has been done by hops since the fourteenth century, but before then a whole variety of plants and roots—collectively called *grute*—performed the same function. Its terminology was as varied as its composition, so much so that historians have put forward many suggestions to explain it—yeast, pigment, malt, colouring substances, antiseptics, etc. In a way it was all of these things, but its real purpose was to improve the taste of the beer. Its actual composition remained a secret until this book revealed that it consisted mainly of gale, with other herbs and resins. The study is based mainly on Dutch documents of the fourteenth century, but some of the evidence used is as early as *c.* A.D. 1000. Dr Doorman claims that the use of *grute* originated in the Lower Meuse region, where the nature of the soil certainly favoured the growth of gale. *Grute* was provided by manorial *gruteries*. The feudal lord disposed of the *grute* as he wished, and quite often towns would acquire the right to establish *gruteries* of their own. *Grute* being part of the manorial economy, it existed wherever this form of organization was prevalent. The documents of *gruteries* have helped the author to explore other aspects of the history of brewing: the introduction of hops, the technical organization of the breweries and *gruteries*, the use of yeast, etc. Some extracts from the documents are included at the end of the book.

P. SMOLDERS

L. LIAGRE. 'Le commerce de l'alum en Flandre', *Le Moyen Age*, LXI (1955), 177–206.

The alum trade appears in Flanders in custom rolls from 1163 on; it can be followed in Genoese notarial documents from 1277 on. The papal monopoly for the Tolfa alum (1468) was strictly enforced by Charles the Bold in 1468, but slackened in 1473. In 1491 the alum staple was granted to Antwerp and contributed to founding the prosperity of that town during the sixteenth century.

J. A. VAN HOUTTE

J. MARÉCHAL. *Bijdrage tot de Geschiedenis van het Bankwezen de Brugge*. (Bruges: De Anjelier. 1955. Pp. 169. For private circulation.)

This contribution to the history of banking in Bruges has as its purpose the supplementation of R. de Roover's *Money, Banking, and Credit in Mediaeval Bruges*. Maréchal divides the Bruges money-dealers into three categories: (1) the Lombards who specialized in pawnbroking and were only tolerated as the lesser of two evils; (2) the money-changers who combined manual exchange and deposit banking; and (3) the merchant-bankers—mainly Italians, but also Catalans—who engaged in international banking and dealt in bills of exchange. Maréchal's book has little on the economics of medieval banking, but is richly documented on matters of local interest and makes several corrections and additions on points of detail. Thus we learn that there were really five, instead of four, free money-changers who held their offices in fief and that Guillaume Ruyelle, or Willem van der Ruwele, whose ledger is still extant, was one of them. Collard de Marke, the other money-changer whose account books are still preserved, was presumably among the licensed money-changers, although his business was far more important than that of Ruyelle. There is also new information on the exact location of the money-changers' offices, the seals used by the Italian and Spanish colonies, and the residence of the Medici Bank, Hôtel Bladelin.

R. DE ROOVER

Boston College, Boston, Mass.

Bryce D. Lyon. 'Un compte de l'échiquier relatif aux relations d'Edouard I^er^ d'Angleterre avec le duc Jean II de Brabant', *Bulletin de la Commission royale d'Histoire*, cxx (1955), 67–93.

This exchequer account (P.R.O. Var. Acc. E/101/619/10) of 1305 has some importance not only for political history but also for the knowledge of the technique of letters obligatory and of the role of Italian bankers.

J. A. van Houtte

M. K. E. Gottschalk. *Historische geografie van Westelijk Zeeuws Vlaanderen tot de Sint-Elisabethsvloed van 1404.* (Assen: Van Gorcum. 1955. Pp. xii+236. French résumé.)

This is a Utrecht thesis which gives an excellently worked out survey of the beginnings of western Zeeland-Flanders from the time when the dykes were first built to the changes which the flood of 19 November 1404 brought about. From the point of view of irrigation and the management of water the author's discussion of the inundations of 1375–6 is of great importance. For economic history in general, of especial value are the author's discussion of the dyking and the opening up of the land and more especially the important facts relating to woods and timber, orchards and the cultivation of dyes. The economic history of the towns of Aardenburg, Oostburg, Biervliet, Ijzendijke, Mude and Sluis, which are of special importance, is described in a wealth of data, mostly derived from unpublished sources. The same also applies to the account of the waterways of Bruges and Ghent. The second part, now in preparation, will cover the history of the region between 1404 and 1583 and will deal with the inundations made necessary for military reasons during the Eighty Years War.

W. S. Unger

H. P. H. Jansen. *Landbouwpacht in Brabant in de 14e en 15e eeuw.* (Assen: Van Gorcum. 1955. Pp. 140. Gld. 6.90.)

It is well known that among the measures undertaken during the thirteenth and fourteenth centuries to re-organize the manor after the break-up of the classical manorial organization, one of the most important has been the letting out of land on lease for a fixed term. Abundant documents, consisting of contracts concerning fixed-term leases in the southern part of the Netherlands and the northern part of modern Belgium, and preserved in the town archives of 's-Hertogenbosch, enabled M. Jansen to undertake the study of the fixed-term lease in that region during the fourteenth and fifteenth centuries, not as an element of manorial organization but as a system of exploitation in itself. M. Jansen thus observed that fixed-term leases found a particularly vigorous application, not on old manors but on lands brought under cultivation during the thirteenth and fourteenth centuries, which characterize the greater part of the Dutch province of Noord-Brabant and northern Belgium. The cause of this phenomenon is the more progressive and individualistic character of agriculture and the absence of old communal practices on these newly cleared lands. Since these were mostly attached to big farms, fixed-term leases became the ordinary way of exploitation of the latter. The spread of the new institution was also favoured by clauses that made its adoption attractive for the lessee: it could be stipulated in the contract that half of the cattle of the farm should be brought in by the lord and that the lessee should have to pay his first rent only after the first harvest. The profound difference between the fixed-term lease and the older systems of land-tenure is reflected in the social and economic condition of the lessees: they were not the descendants of the old peasants but new men, wealthy and with a somewhat 'capitalistic' mentality. M. Jansen's work ends with a comparative study of fixed-term leases in the region of Louvain, far less progressive and profoundly marked by traditional agricultural techniques. It helps to stress the original character of the region for which the author has reconstructed so well the agrarian institution that forms the object of his study.

A. VERHULST

University of Ghent

P. JEANNIN. 'Anvers et la Baltique au XVIe siècle', *Revue du Nord*, XXXVII (1955), 93–114.

Antwerp became the chief market for the Hansards as early as the mid-fifteenth century: they imported mainly grains and exported southern and colonial products and manufactured goods. The contact they established there with Southerners resulted in the adoption of Mediterranean commercial techniques in the Baltic regions. Not less important was Antwerp trade in the Baltic itself, which weakened the position of the Hanse towns.

J. A. VAN HOUTTE

HERMAN VAN DER WEE. 'Sporen van Disconto te Antwerpen tijdens de 16e Eeuw', *Bijdragen voor de Geschiedenis der Nederlanden*, X (1955), 68–70.

This brief study purports to challenge R. de Roover's thesis on discounting and presents as evidence the case of a bill obligatory that was actually discounted in 1536. However, the practice of discounting did not extend to bills of exchange, since interest was already included in the rate of exchange. It should be emphasized that the English merchants, in contrast to the Italians, favoured the use of writings obligatory rather than of bills of exchange in draft form and gave circulation to such instruments by passing them from hand to hand at the marts of the Low Countries. Far from contradicting de Roover's thesis, it seems that van der Wee's article is consonant with it: the business practices of the English and the Italians were not the same. As Mr van der Wee correctly points out, the English used the bill of exchange chiefly to transfer funds, whereas the Italians used it to extend credit as well as to transfer funds.

R. DE ROOVER

Boston College, Boston, Mass.

C. VERLINDEN, J. CRAEYBECKX and E. SCHOLLIERS. 'Mouvements des prix et des salaires en Belgique au XVIe siècle', *Annales (Economies, Sociétés, Civilisations)*, X (1955), 173–98.

This article makes a study of the Belgian price-revolution of the sixteenth century and in the general trends the authors stress the importance of the growing quantitative supply of precious metals and of the expanding velocity of circulation. By the study of the cyclical movements, which were growing in intensity towards the end of the century, they emphasize the importance of monopoly, particularly in the matter of foodstuffs. On the subject of wages they stress the fact that wages followed prices with a very short time-lag.

H. VAN DER WEE

University of Louvain

E. SCHOLLIERS. 'De levensstandaard der arbeiders op het einde der XVIe eeuw te Antwerpen, *Tijdschrift voor Geschiedenis*, LXVIII (1955), 80–103.

This article examines the influence of the price-revolution in sixteenth-century Antwerp upon the income of the working-class, in particular during the critical period 1585–99. The dearth-peak of 1587 caused a collapse of the real wages of the workers. When from 1588 normal corn-prices reappeared, the government made attempts to reduce nominal wages. A considerable decrease in the labour supply caused by growing emigration of the working-class, was the cause of its failure.

H. VAN DER WEE

B. H. SLICHER VAN BATH. 'Agriculture in the Low Countries (*c.* 1600–1800)', *Relazioni del X° Congresso Internazionale di Scienze Storiche*, IV, *Storia moderna* (Florence, 1955), 169–203.

This report is the only comprehensive study on the subject, and quotes a great number of extant monographs.

J. A. VAN HOUTTE

W. BRULEZ. 'De zoutinvoer in de Nederlanden in de 16e eeuw', *Tijdschrift voor Geschiedenis*, LXVIII (1955), 181–92.

The author emphasizes the brisk rise of the imports of Spanish as a substitute for French salt, in the Low Countries. It was considered so important an article of trade that Spain based some schemes for the subjection of the Dutch rebels on prohibition of export of salt, just as a monopoly of salt imports had frequently been considered in the Low Countries themselves as a means to replenish the Treasury.

J. A. VAN HOUTTE

H. VAN WERVEKE. 'Demografische problemen in de Zuidelijke Nederlanden (17e en 18e eeuw)', *Mededelingen van de Koninklijke Vlaamse Academie voor Wetenschappen, Letteren en Schone Kunsten van Belgie, Klasse der Letteren*, XVII (1955), no. 1. Pp. 19.

This study sums up a series of local inquiries on population problems in the Habsburg Netherlands. In the towns, a steep rise during the seventeenth century was followed by a marked decline during the first half and a recovery during the second half of the eighteenth century, whereas in the countryside progress was uninterrupted all the time. Some factors of interpretation are put forward.

J. A. VAN HOUTTE

C. W. van Voorst van Beest. *De Katholieke Armenzorg te Rotterdam in de 17e en 18e eeuw.* (The Hague: Excelsior. 1955. Pp. 148. Gld. 9.75.)

This study of Catholic poor relief in Rotterdam in the seventeenth and eighteenth centuries throws some light on population conditions in the Dutch port. The Catholics, who enjoyed autonomy in matters of assistance to their poorer fellow-believers, organized this mainly on a parochial basis, which did not foster efficiency: the orphanages were even as numerous as the parishes. The assisted people were mostly fresh immigrants, attracted to the town by its flourishing commerce and industry, and originated mainly from Western Germany or Dutch-Brabant. Since wages were on a very unsatisfactory level, they were supplemented by relief grants, partly in cash, partly in kind. We know also where the revenue of the relief-funds came from in the eighteenth century, and may wonder, after Mrs Carter's articles on Dutch investments, at the total absence of English bonds in regard to the great variety of assets, where Dutch, Belgian, Austrian, German, Russian and Danish loans were largely represented.

J. A. van Houtte

J. Helsen. 'Oud grensrecht', *Bijdragen tot de geschiedenis* (Antwerp), 3rd ser. vii (1955), 9–30.

This article analyses the *Tractatus de jure limitum* by Johann Judocus Beck, published in 1729, and draws parallels with the concrete customs of the Kempen (i.e. the region east of Antwerp) on limiting commons, fields, etc.

J. A. van Houtte

J. A. van Houtte, J. F. Niermeyer, J. Presser, J. Romein and H. van Werveke (eds.) *Algemene Geschiedenis der Nederlanden*, vol. viii. (Utrecht: W. de Haan; Antwerp: Standaard Boekhandel. 1955. Pp. xix+448.)

Each volume of this history contains one or two chapters devoted to economic affairs, and for the economic aspect of history they perhaps follow a questionable division into periods. In this volume (1748–95) H. Coppejans-Desmedt has studied the economic progress of the Southern Provinces (pp. 261–86). She traces perfectly the changing attitudes which characterize this period: the attempt of the authorities to develop the national economy, particularly the internal strength of the Belgian economic structure, and what may be called a change in the rhythm of growth shared by population, agriculture, commerce and industry. There is an excellent analysis of international commercial relations. Old methods of production resisted the new, but in vain, and the standard of life rose, although poverty remained a dangerous evil. In short, we are shown the first fruits of the 'classic capitalist system' making themselves clear. This alteration in rhythm is marked by price changes which might have been stressed more despite the notorious unreliability of our knowledge of Belgian conditions at this time. Something further might have been said, too, about capital and investment by entrepreneurs even if the results were modest in scale and from rudimentary, personal resources.

P. LEBRUN

University of Liège

In the same volume (pp. 222–60), J. de Vries describes the decay of the Dutch staple market, which, however, did not mean a general regression of trade. Exceptions apart, such regression appears only in relation to other countries, where progress was faster, while the United Provinces were stationary. There was progress definitely on the stock-market (there is a good summary of the crises of 1763 and 1773). Industry is in most cases decadent in towns, owing mainly to higher taxation, but prospering in the countryside. The schemes of 1751 to establish a general porto-franco, and those of the 'Patriot' Movement from 1777 on, for a general reappraisal of Holland's economic position, resulted in nothing. Some pages on economic and social history can also be read in the chapters of a more general scope by L. P. L. Pirenne on the *Generaliteitslanden*, i.e. the non-associated catholic region south of the rivers, under government of the States-General (pp. 315–51), and W. Ph. Coolhaas on the Dutch colonial world (pp. 352–90): both cover the period 1648–1795.

J. A. VAN HOUTTE

H. F. T. J. M. VAN DEN EERENBEEMT. *'s-Hertogenbosch in de Bataafse en Franse tijd, 1794–1814. Bijdrage tot de kennis van de sociaal-economische structuur.* (Nymegen-Utrecht: Dekker & Van de Vegt. Pp. xx+329. Gld. 8.50.)

This study deals with the economic and social structure of 's-Hertogenbosch during a period which, in the history of the Netherlands, is generally thought to be one of economic decline and increasing poverty. The author devotes his attention to trade, industry, the structure of the population and the public medical care. The town in this transition period managed to hold its own as a centre of trade and traffic over an extensive area (in 1806 there were upwards of 700 shops), but as regards industrial activity, under the influence, too, of the abolition of the old privileged trade-crafts, it had to give way to rising rural centres (Tilburg, Helmond) and foreign centres (Rhineland). Only by drawing on cheap labour in the surrounding villages could most of the 's-Hertogenbosch ribbon-factories and yarn twisting-mills retain their leading position, which was of national significance. Poverty among the lower sections of the town people was very great (one-third were upon the poor list), and was only surpassed by that of Amsterdam. In general after 1810 the number of francophiles among this part of the population, as was to be expected, was less high than among the higher classes. The reproof of stubbornly clinging to trade seems to me unfounded, insofar as the far higher wages in the town (in 1812 the day's wages of a workman in a Tilburg cloth-manufactory amounted to 7*d* against 13*d*. at 's-Hertogenbosch) excluded normal competition with the rural centres. Trade in this period still offered many possibilities if we may judge from the relatively strong growth of 's-Hertogenbosch in the years 1819–65 (increase of 78·6 per cent, Eindhoven and Tilburg 40·2 and 67·9 per cent respectively).

L. P. L. PIRENNE

P. B. A. Melief. *De strijd om de armenzorg in Nederland, 1795–1854.* (Groningen: Wolters. 1955. Pp. 240. Fl. 8.90.)

This is a Nymegen thesis dealing with the struggle about Poor Law in the Netherlands, 1795–1854. In dealing with a period in which important structural changes took place, the author has used freely a large number of facts, but has not thereby succeeded in giving a concrete and detailed account of the sociological basis indispensable to a survey of Poor Relief. Mr Melief might probably have been better advised to extend his studies, which are based on the state archives of Gelderland and Overijsel and the town of Utrecht, to the private institutions for the care of the poor. For the latter show more directly and in more lifelike a manner how the men of the nineteenth century saw and treated the problem of Poor Relief. Mr Melief has divided his book into seven chapters which deal respectively with the intervention of National Assemblies into Poor Relief, the law of Poor Taxes of 15 July 1800, the growing confusion in the care of the poor between 1800 and 1813, the regulation of the domicile of the poor, the continued secularization of church relief, the struggle over freedom of church activity in this field and the compromise of the Poor Law of 1854. Had Mr Melief's book also contained a subject index, its usefulness would have been considerably enhanced, and its repository of valuable facts would have been of greater use. His study brings out clearly that in the first half of the nineteenth century determined attempts were made to set limits to the blind charity of preceding centuries and to deal with the problem of pauperism by the creation of employment. By delving thus deeply into the complicated problems of Poor Relief the writer has made a contribution to our knowledge of the social history of the nineteenth century.

H. F. J. M. van den Eerenbeemt

Tilburg School of Economics

J. M. G. van der Poel. 'Mislukte codificatie van landbouwrecht: de Code rural', *Publicaties van het Genooschap voor Napoleontische studies*, vii (1955), 39–48.

This study of the unsuccessful attempt to codify the rural law is based on the survey of agriculture prepared in 1811 for the purpose by the French government. It is an invaluable source for the history of rural life in Holland.

J. A. van Houtte

H. R. C. Wright. *Free Trade and Protection in the Netherlands, 1816–1830. A study of the first Benelux.* (Cambridge University Press. 1955. Pp. 251. 31*s.* 6*d.*)

The preliminary chapters on the economic situation of the Northern and Southern provinces at the end of the eighteenth and at the beginning of the nineteenth centuries are cogent in describing the decline of Dutch commerce, but somewhat disappointing as a study on the awakening of the industrial revolution in the Belgian area. Contact with recent Belgian research and publications (J. Dhondt, P. Lebrun, H. Coppejans-Desmedt, and others) should have supplemented the work. By virtue of first-rate contemporary information, the author then gives us a magnificent study of the commercial policy of William I. The protective tariff policy of 1816, as a concession to the young Belgian industries, in complete depression after the collapse of the continental system, should be considered rather as a consequence of these circumstances. The new tariff-system of 1821–2, breaking away towards free trade, was to have become the basis of a strong policy, which aimed at a complete economical reorientation of the Netherlands. Here the powerful personality of the king is completely revealed. The definite success of modern technique in Belgian industry and the structural changes from the traditional Dutch staple market towards expanding transit trade, formed the double goal the king was striving to obtain. His considerable financial support and his colonial trade policy were both means to realize this double growth. In conclusion the author examines briefly the causes of the failure of the Dutch-Belgian Union. Once again, insufficient knowledge of the Belgian contemporary sources does not allow him to present a satisfactory solution of this problem.

H. van der Wee

J. A. van Houtte, J. F. Niermeyer, J. Presser, J. Romein and H. van Werveke (eds.). *Algemene Geschiedenis der Nederlanden*, vol. x (1840–85). (Utrecht: W. de Haan; Antwerp: Standaard Boekhandel. 1955. Pp. xx+458.)

Five chapters of this volume are of particular interest to economic historians, and they explore in comparison with the economic scene depicted by Mme Coppejans-Desmedt in vol. viii, a new world. It has been well described, despite the notorious inadequacy of the bibliography of this period. The period witnessed the disappearance of small isolated producers, concentration of production in factories, the dominance of mass production, an ever greater pressure for mechanization, the development of railways, an enormous growth of production, the diminution of numbers engaged in agriculture relative to those in industry, the import of foodstuffs, the vast increase in foreign trade which broke free from dependence on the Dutch, and looked towards distant lands. There was, too, the triumph of free-trade (its only time of real triumph), and the transition from the individual money changers, with occasional discounting, to a banking mechanism financing production and public companies. All this is delineated as precisely as the sources allow, but, nevertheless, part of the value of the book lies in its skilfully showing the danger of a 'global' periodization applied uniformly to all types of human activity and creating an arbitrary synthesis.

P. Lebrun

In this section of the same work (pp. 314–49) Professor Dhondt follows the evolution of the 'social problem' in Belgium between 1830 and 1885. However, the most fundamental issues remain very much unsettled—for example, the concept of 'worker' in the nineteenth century has involved many misconceptions. To elucidate it fully, it would be necessary to know exactly the origin of the initial labour force in heavy industry, and to be much more certain of the respective roles played by workmen and owners in the first associations. One thing, however, seems to be established: there were three stages in social evolution between 1830 and 1885. From 1830 to 1848, the problems remained predominantly political in form as bourgeois intellectuals, with the help of a few artisans, sought to reform the constitution of the state. After the revolutions which convulsed Europe in 1848 the working-class elements became of increasing importance, although still mingled with members of the bourgeoisie, now—a new thing—alienated from their own class. From this point the object was the improvement of the economic and social condition of the working class. The last period was dominated by the ephemeral life of the First International which prepared the way for the *Parti Ouvrier Belge* founded in 1885.

V. Robert

Mr W. Ph. Coolhaas's chapter on the Dutch East Indies, 1830–87, deals with a period during which the *Cultuurstelsel* was introduced and operated, also the period of transition towards the opening of the Dutch East Indies to the western businessman. The author has not apparently found it possible to bring decisive arguments to bear on the importance of the *Cultuurstelsel*. A story of the attempts to extend the Netherlands sway over the Indian Archipelago completes the chapter.

I. J. Brugmans's chapter on the economic and industrial conditions in the North between 1840–70 appraises the transition of 'early capitalism' to 'modern capitalism during a period in which economic life in all its manifestations (with the exception of the agrarian sector) underwent a process of renewal. The writer maintains that the industrial revolution came to the Netherlands between 1850 and 1870—a concept which is not commonly held. Of considerable importance is his critique of Van Dillen's view that the stagnation in economic life was due not to defects in economic activity, but to unfavourable circumstances.

Th. van Tijn's chapter dealing with the Netherlands on the threshold of the modern age contains a comprehensive analysis of Netherlands economic, social, political and cultural life about the year 1870. The accent was not as yet wholly modern and in several respects the underdeveloped character of the Netherlands still manifested itself. Although in various branches of national life the progressive forces were already effective, the modern Netherlands did not come into being until the mid-1880's.

J. de Vries

University of Amsterdam

Histoire des finances publiques en Belgique, vol. III. (Brussels: E. Bruylant; Paris: Recuiel Sirey. 1955. Pp. 469.)

This deals with the last century. There is little new in the chapters on the National Bank by F. de Voghel and P. Kauch (pp. 1–65); that of R. Miry (pp. 67–100) on the state savings bank and other public financing establishments—most of them not older than a couple of decades—illustrates clearly the growing state intervention in an originally liberal society. Quite new is the paper of F. Delory on railway finances, including the era of private companies (pp. 101–43), and still more that of E. Lecat on the income and returns of telegraphs and telephones (pp. 145–88). The study of Ch. Mees on provincial and local finances (pp. 189–259) summarizes many separate and little known lines of evolution, and does so very clearly. In these papers, however, particular emphasis is laid on more recent developments, particularly from 1918 onwards. This is not the case with G. Heenen's on the Congo (pp. 261–355), which gives satisfactory attention to the era of the Free State and the first years of Belgian colonial rule. A concluding chapter by G. Eyskens on Belgian finances 1944–54 brings us to the present day. On the whole the book will provide useful initial knowledge of the matters treated. It is however to be regretted that only few authors included a selective bibliography, which does not make it any easier for the reader who is not already familiar with the original materials to go deeper into the matter.

J. A. van Houtte

Max Suetens. *Histoire de la politique commerciale de la Belgique depuis 1830 jusqu'à nos jours.* (Brussels: Librairie Encyclopédique. 1955. Pp. xv+448.)

The author is a Belgian civil servant who has been closely associated with the country's foreign trade and commercial policy and his book is essentially devoted to current history. The last forty years take up two-thirds of this book, and it does not purport to tell the inside story, which the author certainly could have done, but obviously was neither willing nor authorized to do. The result is no more than a summary of communiqués, not even including newspaper news. Neither for the latter period nor before 1914 will the reader find a single reference to sources. It thus seems that a comprehensive history of Belgian commercial policy remains to be written.

J. A. van Houtte

M. van Grieken-Taverniers. *Inventaire des archives des Affaires étrangères de l'État Indépendant du Congo et du ministère des Colonies 1885–1914.* (Académie royale des sciences coloniales. Classe des sciences morales et politiques. Mémoires, New Ser., 8°, vol. II, no. 2. Brussels: Académie royale des Sciences coloniales. 1955. Pp. 125. B.frs. 150.)

Trade in the Congo region and other economic matters are among the subjects dealt with in this calendar of records.

J. A. van Houtte

A. Huybrechts. 'La formation des prix du chemin de fer de Matadi à Léopoldville 1898–1954', *Bulletin de l'Institut de Recherches Economiques et Sociales* (Louvain), XXI (1955), 501–51.

This article describes a curious case of railway history in a colonial environment. Tariffs and returns reflect the general economic position of the Lower Congo region and the effect of competition by other means of transport.

J. A. van Houtte

H. J. A. M. Schurink and J. H. van Mosselveld (eds.). *Van Heidorp tot Industriestad: Verkenningen in het verleden van Tilburg.* (Eindhoven: Brabants Heem. 1955. Pp. 279. Gld. 9.50.)

The title of the book is: *From Heath Village to Industrial Town:* nevertheless readers must not look to it for an account of the social and economic development of an agricultural village in to an industrial town. The book is a collection of studies on subjects of pre-history, folklore, language, topography, political science, society and economy—a number of separate articles which do not stand in close relation to each other. Although in general these essays contain valuable materials, their separate publication in journals would have been preferable. Another objection is that the seventeenth and eighteenth centuries are virtually unrepresented. The same is also true of the period before and after 1830, although it was in the 125 years since then that rural Tilburg has grown into a large town. The following chapters will be of interest to economic historians: by P. C. Boeren on the Tilburg wool industry up to the beginning of the seventeenth century, by H. van den Eerenbeemt on Tilburg industry and the first general exhibition of popular industry in Utrecht, 1808, by L. G. J. Verberne on Tilburg about 1830, by M. D. Simons on poverty in Tilburg a century ago, by J. H. van Mosselveld on the markets. H. Schurink's bibliography of Tilburg is highly important for those who want to go more deeply into the history of the town.

H. F. J. M. VAN DER EERENBEEMT

Tilburg School of Economics

OTHER COUNTRIES

J. DUFFY. *Shipwreck and Empire.* (Harvard University Press. London: Geoffrey Cumberlege. 1955. Pp. 198. 32*s.*)

One of the factors most frequently put forward in the text-books to explain the decline of the Portuguese Empire in the East in the early seventeenth century is the increased frequency of shipwrecks. Eighteen narratives survive in print, and from these Mr Duffy describes the ship, the complement, the voyage, the wreck, and the subsequent march to civilization. It is clear that the immediate causes of disaster were ships of excessive size, bad loading, overloading, poor discipline, and poor morale. The ultimate causes, however, remain as obscure as ever, and the difficult statistical problem of demonstrating the importance of shipwrecks deserves more than one brief paragraph. But this analytical summary is undoubtedly useful, and the material, though very limited in character, is well handled. It is an interesting book to read.

LAWRENCE STONE

Wadham College, Oxford

BERNARD BAILYN. *The New England Merchants in the Seventeenth Century.* (Harvard University Press. London: Geoffrey Cumberlege. 1956. Pp. 249. 38*s.*)

Mr Bailyn's book is published in the *Studies in Entrepreneurial History* which have already made several valuable contributions to the history of commerce and industry. His theme is one of great interest and importance: the character of the struggle by the merchant community to achieve a position where (as Mr Bailyn says) by the 1670's, it was 'an effective agent of change in the nascent society of colonial New England'. In the early period, the dominant problem was that of establishing the merchants' freedom of action in a Puritan society which represented 'security and status' to most of the settlers but implied 'constriction and denial' to men who had risen through the struggles of city life. This section of Mr Bailyn's study is well done. He marshals his evidence effectively. Though he modestly refrains from any expansive generalizations that might traverse the boundaries he sets himself, there can be no doubt that future writers on the

Puritan ethic will neglect his investigations at their peril. Their victory painfully won, the merchants found themselves facing another and even less tractable problem. The peculiarly awkward character of the North American situation in the network of British overseas trading arrangements has long been an established theme of studies in early colonial development. Mr Bailyn, here as elsewhere, gives an old subject a new and sharper outline, not least by the biographical material he has uncovered. In the present phase of the history of commerce and industry, an important function must be to replace the abstract by the concrete, anonymity by identity. This Mr Bailyn does when he describes the operations of men like Samuel Shrimpton, the elegant Anglican merchant whose periwig, riches and general behaviour grieved Samuel Jewall, whose modest worthiness recalled an earlier and more earnest generation. Equally significant are the manœuvres of Edward Randolph, the first collector of customs at Boston. At every point, the close relations of the merchants of the New World with those of the Old emerge clearly, so that Cornhill, Boston, was but an extension of medieval London.

The task of harmonizing a theme with the kind of material that includes much biographical detail is never easy. Mr Bailyn is too conscientious an historian to allow the theme to iron all the creases out of his evidence. Occasionally (and especially at the beginning of the book) the nature of the main theme is obscured by material the relevance of which is not made sufficiently clear. But on the whole the treatment is clear and effective.

On one point the reviewer felt some reservations. Was it really as late as the eighth decade of the century, and then 'suddenly', that the dilemma of the merchants in relation to English commercial policy was revealed? Those who were preparing the *putsch* against New Netherland as early as 1663 had a great deal to say about the iniquities of New England merchants who were dealing all too successfully with the Dutch. On p. 13 Mr Bailyn refers to what was still New Amsterdam as 'New York'. In general, the significance of the decision to capture the headquarters of the Dutch trade in North America in 1664 seems to be underestimated.

CHARLES WILSON

Jesus College, Cambridge

MARTHA VAN HOESEN TABER. *A History of the Cutlery Industry in the Connecticut Valley.* (Smith College Studies in History, vol. XLI. Northampton, Mass., 1955. Pp. 138. $2.00.)

The regional study of economic history in America is a profuse growth. Smith College in Massachusetts has already published no less than seven studies of various aspects of the economic history of the Connecticut Valley, and has now added an admirable eighth volume concerning its cutlery industry. This is a story of little more than one hundred years' growth, and one that raises points of interest for economists as well as for economic historians. Against the competition of superior products of the older established English and German industries, the cutlers of Massachusetts and Connecticut were unable at first to touch more than the fringe of the home market until the steady growth of tariffs afforded increasing protection. From the 1830's there was a steady expansion both in cutlery production in the Valley and in the size of the firm. By 1903, the Valley already housed the company claiming to be the world's largest producer of cutlery. If there is a bias in this book, it is rightly disposed towards the human element, for the parts played by both entrepreneurs and labour receive full attention. The men who created the dozen or so firms in which a high proportion of Valley production was concentrated were Valley men, leaders of their local communities, and were themselves craftsmen, 'interested in mechanical devices and gadgets, in good workmanship, and, incidentally, in profits'. Amalgamations were rare, though associations of manufacturers for price control were persistent after 1870. Perhaps because the industry in its early days was labour-intensive, trade unionism came late; the threat of the substitution of capital for labour rendered workers in most branches of the industry docile, and average wages were relatively low. Miss Taber's account is based throughout on extensive collections of letters and business papers of some of the principal cutlery firms in the Valley, and she has made good use of material available in the decennial Federal Censuses of Manufactures from 1840. M. W. FLINN

Middlesex

DAVID A. SHANNON. *The Socialist Party of America.* (New York and London: MacMillan. 1955. Pp. xi+320. 31*s.* 6*d.*)

The student of left-wing political movements, or of American history in general, will be grateful for Dr Shannon's book, which gives an excellent account of the American Socialists in the days of their rapid progress in the early years of the century and in the subsequent period of decline. Free of the doctrinaire bias which marked Ira Kipnis's work on the subject, Dr Shannon shows that the Socialists, when they were an important force in American politics, possessed a variety of local and sectional characteristics comparable with those of the major parties. All these peculiarities the author describes with tolerance, good humour and careful scholarship. The European reader may feel that the narrative would have benefited from a fuller comparison with Socialism in other countries, and that there should have been more discussion of the links with sympathizers in Britain, Germany and elsewhere. It would also be interesting to know more of the struggle to win over the American Federation of Labor, and of the detailed reasons for the failure in this sphere, which was crucial for the movement as a whole. Those concerned with the recent history of Britain, however, will envy the richness of the unpublished sources which Dr Shannon has found available and has put to good use. HENRY PELLING

Queen's College, Oxford

E. E. RICH (ed.). *A Journal of a Voyage from Rocky Mountain Portage in Peace River to the Sources of Finlays Branch and North West Ward in Summer 1824.* ([By Samuel Black]. Assisted by A. M. Johnson, with an introduction by R. M. Patterson. The Hudson's Bay Record Society. 1955. Pp. c+260.)

Samuel Black was among the foremost of the truculent and violent Montreal competitors against the Hudson's Bay Company during the early nineteenth-century contest which wasted the fur trade of the North American West, disrupted the Indians, exhausted the rival companies, and ended by their amalgamation in 1821. Having competed directly with George Simpson, the driving, economising, new Governor of the Northern Department, he (along with the similar Peter Skene Ogden) was kept in suspense until the unruly pair made agreement on a visit to London in 1823 and each was sent to a remote and difficult district. Black's task was to expand the depleted Athabaska Department and forestall the Russians by establishing a route through beaver country from the high plains to the Rocky Mountain Trench and thence to the headwaters of rivers, preferably leading to the Pacific Coast, but possibly circling back to the Mackenzie Basin. His *Journal* records an amazing, but unprofitable, enterprise which explored the Finlay to its sources, and struggled through the maze of mountains seven to ten thousand feet high. Travelling as they probably did at the modern maximum of glaciation, their travels in canoe and on foot through tortured, rocky country, almost uninhabited by Indians, were plagued by snow, ice, and night frosts, not to speak of desertions. Since Black found no good beaver country, and since his painful passage on foot took him to the headwaters of the Liard tributary of the Mackenzie instead of to the mythical Cook's River, little was achieved of a positive sort. Not until 1928 was it realized that Black, not John Finlay, had made the exploration. Black's own misjudged ambitions to make his name as an explorer, geographer, and amateur geologist were thwarted until this publication. Fortunately, in addition to the usual lavish documentation by the Company Archivist and her staff, the text is introduced and substantially annotated by R. M. Patterson, author of *The Dangerous River* (1954) and a redoubtable wilderness traveller in the Canadian Northwest during the past thirty years. His quiet authority and shrewd judgments of the country and, particularly, of Black and the other actors in the events confer distinction on what might otherwise be a wordy, would-be euphuistic failure by Black to achieve it. Anthropologists should welcome Black's picture of the victimized Sekani and Thloadinni Indians in a barren region almost untouched by the white man's culture. Economic historians may be reminded of the failures that accompany successes. Aviation and photography have eclipsed the geographers' indebtednesses. Yet the persistent map problem remains, for the version provided here lacks sufficient names and scope to make Mr Patterson's introduction intelligible and the uninformed reader must guess too frequently even when he follows the course described in the text and the excellent notes. J. B. BREBNER

Columbia University, New York

WILLIAM W. LOCKWOOD. *The Economic Development of Japan: Growth and Structural Change 1868–1938.* (Princeton U.P.: London: Geoffrey Cumberlege. 1955. Pp. 603. 63*s*.)

Until recently economists have generally hesitated to venture outside the framework of Western society and study the economic processes of other areas. During the decade since the war, 'area study' (as the attempt to bring the major disciplines to bear upon foreign societies or cultures) has been most handicapped by a dearth of economists willing to become regional specialists. The reason why is rather plain. Analysis relying upon quantification is difficult if not impossible for statistically backward areas; few practitioners of a presumably universal discipline like economics want to bear the ignominious label of regionalist. Until recently, historians (who are regional specialists by tradition and find 'area study' second nature) have felt themselves up against a professional dereliction of duty on the part of economists: a study of the milk trade of upper New York state could get a young economist through his doctoral training and launched on a career more readily than any approach he might make to the study of China or Japan.

Fortunately the newly expanding field of economic development, since it deals mainly with foreign areas, now offers respectability to the regional specialist in economics. Yet William W. Lockwood's comprehensive and thoughtful study of *The Economic Development of Japan* does not suggest that the generalist-vs.-regionalist dilemma can easily be resolved. Twenty years of studious and practical concern with the Far East, as well as with economics, lie behind his book—its success is due not only to the author's grasp of economic analysis but equally to his grasp of Japan. The key to understanding the process of economic growth, judging by this notable study, lies in evaluating the interaction of a great variety of economic *and other* factors within the overall social and cultural context. This truism is demonstrated, I think, by the way in which Mr Lockwood cuts one after another hasty or inadequately-based generalization down to its proper size, and corrects the emphasis that should be given to certain well-known factors like foreign trade, foreign specie or credit, or the Zaibatsu. In short, a final explanation of the economic growth of Japan involves so much more than purely economic data, such a grasp of cultural values and social and political processes, that Mr Lockwood's combined generalist-regionalist approach seems to be the only way to work out a realistically comprehensive account.

The author's procedure is to introduce the reader to the modern Japanese scene in two historical narrative chapters, then to summarize the statistical 'over-all dimensions of growth' in the seventy years from 1868 to 1938, and then to deal in succession with the major elements analytically visible in the process—technology, capital, foreign trade, structural change in demand and resource-use, and the role of the state. Needless to say, the influence of each element is affected by all the others; the story is complex and goes over the same ground several times from different points of view, like a novel in which each of several characters recounts his own participation in a dramatic plot. The result is full-bodied and multi-dimensional. Even though Mr Lockwood regrets that his impersonal statistics cannot adequately 'convey a sense of the human aspirations, the personal leadership, the toil and learning and sacrifice which built the Japanese economy', his study is an important contribution in the field of modern history which may well serve as a model of its kind.

The treatment of Japan's population growth may illustrate the book's method. Ch. 4 on 'Technology' concerns 'the central feature of the whole process, advancing labour efficiency', and so deals with the 'secular rise in productivity' in relation not only to population growth, but also to changes in production technique, the widening of markets, and new forms of industrial organization, under a number of sub-heads. Concerning Japan's population growth, as the first topic in this section, the point is made that its increase was on the Western scale but in an already more densely populated country, lacking both Europe's emigration outlets and her level of productivity from which to draw a surplus for investment. Quite aside from its economic impact, the increase subtly affected personal and family psychology, class relations, and national policy. Economically, it enlarged the number of dependents faster than the labour force, and concentrated the latter as unskilled 'urban peasants' in cities. On balance the author concludes that, rather than stimulating industrialization, as often alleged, this population increase probably deterred it by retarding those developments in *per capita* income, market demand, labour skills and capital accumulation which might have advanced more rapidly in a context of slower demographic growth. While such a reviewer's summary does scant justice to, it may suggest the inclusiveness of, Mr Lockwood's treatment of a single point. This particular point of course has implications for the Chinese, Javanese and Indian industrialization efforts today.

To take another example, Mr Lockwood illumines the nature and function of the Zaibatsu by putting them in the social and historical setting which saw their rise to power—the early assistance given them by state patronage; the combination of family and corporate control, inter-corporate stockholding and financial concentration; the background traditions of guild and clan monopoly, primogeniture, hierarchy and group teamwork; the benevolence of a public policy which eschewed anti-trust laws, heavy taxes or close regulation. At the same time he is quick to note the limitations of Zaibatsu power—they were seldom monopolistic, even though specialized, but joined in oligopolies; yet in many consumer industries they shared the market with flexible small enterprise, and in heavy industries they tended to combine a variety of types of enterprise rather than concentrate on one only. 'The pattern of oligarchy which characterized Japanese politics tended to assert itself in big business as well.' In a situation of limited national market, since industrial development may proceed more easily by a process of 'combined investment' in several related enterprises at once, the Zaibatsu's sprawling growth may have done in Japan the job which is now being performed in industrializing countries by state investment. Here again, the author's analysis is in the best sense inter-disciplinary.

The general trend of his discussion is to put a corrective emphasis on the importance of the domestic as opposed to the overseas market, on the role of the small entrepreneur and small plant as opposed to the big combines or strategic industry, on the function of the state as facilitating private enterprise rather than dominating it, and on the domestic civilian economy, rather than armament or empire, as the chief area of growth. It is consistent with this whole approach, however, that this finely balanced and judicious discussion does not reach simple overall conclusions but (like a well-wrought biography) gives a picture of human effort, organization and activity which is not entirely explicable in economic terms. It eloquently supports that axiom which I suppose everyone acknowledges but which so few of us find time to act upon, that economic growth in a foreign area can be analysed only in the context of the particular social-political-institutional framework which the history of that area reveals. For the student of economic development Mr Lockwood's stimulating example would indicate that the way is made longer and harder by every forward step in social science analysis in general, not merely in economics *per se*, and there are few short-cuts.

J. K. Fairbank

Harvard University

Margaret Dewar. *Labour Policy in the U.S.S.R., 1917–1928.* (London and New York: Royal Institute of International Affairs. 1956. Pp. viii + 286. 45*s*.)

The crux of this useful volume published by Chatham House consists of a catalogue of the decrees on labour issued in the first decade of the Soviet regime. Preferences are given to the official publication in which the decree first appeared, and the contents are briefly summarized. The specialist who will want to have recourse to the originals will be grateful for this handy guide, and the student who, without knowledge of Russian, wishes to obtain a general view of Soviet labour policy will find it invaluable. The catalogue is preceded by four descriptive chapters giving a summary account of the development of labour policy through 'the first phase' of the Soviet regime, when workers' control was the popular slogan, a period of 'war communism', which coincided with the civil war, the first stage of N.E.P. with its attempts to introduce a free market in labour as in commodities without destroying the essentials of the Soviet system, and, finally, the second step of N.E.P. when the principles and practices of planning were beginning to gain ground. Such questions, as labour incentives, wage-rates and piece work, social insurance, labour exchanges, salaries of state employees, conciliation and arbitration tribunals and corrective labour camps all find their place in the legislation of the period. This is a volume on official policy, and no attempt is made to investigate the conditions of living of the workers or such issues as the relation of wages to productivity. But within its limits it is a valuable contribution to the study of the subject. The standard of completeness and accuracy seems to be very high, though there is an odd reference on p. 63 to 'a statement on general policy' which was in fact the Corrective Labour Code of 1924.

E. H. Carr

Trinity College, Cambridge

S. J. Butlin. *War Economy 1939–1942.* (*Australia in the War of 1939–1945, Civil Series.*) (Angus and Robertson. 1955. Pp. vii+516. 25*s*.)

Anyone who has paddled or dived in the oceans of modern government documents and has felt threatened with engulfment will admire Professor Butlin's achievement. British Government documents are no doubt bulkier than those of the Federal Government in Australia. But while the size of the British team of official historians has permitted specialization, Professor Butlin is covering the whole of his country's war economy with the aid apparently of only one research assistant. Professor Butlin has thus been faced with particularly difficult problems of scope and design. They are to some extent the lot of all official historians. This privileged tribe has been given access to documents that cannot be freely available for many years. They may therefore feel, that their works must serve not only as histories but as source books and that detail and direct quotation must therefore be provided in abundance: In Professor Butlin's book the detail tends to obscure the main threads of economic policy. On the other hand, some policies would be clearer if the background had been filled in rather more. For example, the precise nature of the obligations to military service in Australia does not seem to be stated in the manpower chapters and it is not clear what proportion of armaments (e.g. for Australian air squadrons overseas) were bought from overseas. These criticisms are however relatively minor. The book is an impressive analysis of the beginning of Australian mobilization for war. Some of the problems were very similar in their manifestations to those of this country. But the parallels with British experience are perhaps less fascinating than the differences presented by a country preoccupied with its exports of primary products and one still in the throes of industrialization. It is interesting to see how the fate of the export industries which counted for so much in Australian politics and economics was in practice largely determined by the decisions of the United Kingdom shipping authorities in London. All Australia's economic problems in the period of this volume were conditioned by political difficulties and by a reluctance to sacrifice that lasted much longer than in the United Kingdom. One looks forward to the next instalment of the story—Australia's response to the dangers that beset her when war spread to the Far East.

Margaret Gowing

London

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